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MINERAL RESOURCE ANALYSIS
OF THE
DUCKWATER RESOURCE AREA
IN THE
ELY DISTRICT

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MINERAL RESOURCE ANALYSIS
OF THE
DUCKWATER RESOURCE AREA
IN THE
ELY DISTRICT

This analysis is a comprehensive inventory of the minerals and mineral resources found within the Duckwater Resource Area.

The narrative portion of the analysis is composed of two parts -- the Present Situation and Opportunities for Development.

The following overlays were made to supplement the narrative portion of the Mineral Resource Analysis.

1. Mineral Status Overlay - Present Situation - Indicates status of the mineral estate of the unit - regardless of surface ownership.
2. Composite Mineral Overlay - Present Situation - Shows mineral resource areas and indicated mineral resource areas.
3. Composite Mineral Overlay - Opportunities for Development - Shows areas of present activity and areas of potential mineral extraction indicating mining methods used and methods that might be used in the future.

The features on the overlays are color coded and keyed to the Mineral Resource Inventory and the narrative.

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PRESENT SITUATION (STEP 3):

There are no mines producing in the resource area at this time. There is, however, continued interest in the area and evidence of recent prospecting and exploration is found at several locations. Prospects examined in the field are shown on the overlays and referred to in the section - Miscellaneous Prospects. Activity in known mineral resource areas is covered in the narrative on each of the mining districts discussed.

Mineral production statistics for each mining district within the unit will be included in the narrative for that unit in so far as possible.

Since most of the unit lies within Nye County, production figures given are for the entire county. Most of the producing mines in Nye County, at this time, are located in the Tonopah Resource Area of the Battle Mountain District. Mineral activity close enough to the boundary of the unit to create an impact on both districts is included herein.

Total mineral production in Nye County in 1969 (latest available figures) was \$3,128,000. This figure includes production from all sources. The two largest operations, Basic Inc. and the Eagle Springs oil field accounted for an estimated \$2,500,000. The Eagle Springs oil field although not in the unit has a direct bearing upon the exploratory efforts being pursued within the unit directly to the north. As of May, 1971 roughly 1/3 million acres were under oil and gas lease in Nye County. This figure represents approximately \$150,000 in lease rental income per year. There is no recorded mineral production from within the unit.

Current exploration is oriented toward base metals with exploration for silver, gold, copper and molybdenum commanding the most attention. Continued exploration for oil and gas is expected as the current energy shortage becomes more critical.

GENERAL GEOLOGY AND MINERAL DEPOSITS:

The major geographic features in the unit are the White Pine Range, Grant Range, Railroad Valley and the Pancake Range. The White Pine - Grant Range region consists of a series of north-trending folds involving Paleozoic and Middle Tertiary rocks. The post-Middle Tertiary folds are cut by high angle faults, and by a series of low-angle faults emplacing younger rocks over older.

The rock sequence represented is typical of the Eastern Great Basin: about 23,000 feet of Paleozoic carbonate rocks of the miogeosynclinal or eastern facies are overlain by 3,000 to 5,000 feet of Eocene-Oligocene sedimentary and volcanic rocks and by 1,000 to 10,000 feet of Mio-Pliocene sedimentary rocks. Most of the Tertiary rocks in the unit are ignimbrites, nonsorted sheet-like pyroclastic deposits and probable nuee ardente origin. Most of the eastern Nevada ignimbrites are largely welded tuff but some of them are entirely nonwelded tuff. A good description of the ignimbrites in the area is found in Nev. Bur. Mines Report 11, 1965-Stratigraphy of Tertiary volcanic rocks in eastern Nevada.

- The following portion of this analysis is a detailed description of mining districts and individual prospects for which there is information available.

Mining District: ALA-MAR (CURRANT CREEK)
(Magnesite)

GENERAL BACKGROUND:

There are seven recognized magnesite deposits physically separated in two groups. The eastern group contains the Windous, Rigsby and Chester Deposits. The western group contains the Ala-Mar, Rex-Pine Lode, Snowball and White Knolls Deposits.

- Although the deposits have been recognized since the 1930's, the only mining took place between 1940 and 1943 when magnesium was critically needed for the war effort. All have been prospected, but production was limited to the Ala-Mar and Windous Deposits.

A total of 1,200 tons was shipped from the Windous Mine for use as a low iron refractory for General Electric Co. in Newark, California. Forty tons of magnesite was shipped from the Ala-Mar Deposit to General Electric and about 500 tons to Sodaville, Nevada for production of caustic calcine (MgO).

GEOLOGIC AND TECHNICAL DATA:

The magnesite occurs as nodules, as veins or lenses, and as disseminated grains in masses of altered tuff. The host rock is a bedded, calcareous tuff of Late Miocene - Early Pliocene Age. The tuff is underlain by andesite and/or dacite flows and overlain by quartz latite flows. Average thickness of the tuff is 300 feet. All of the beds dip gently eastward and are broken by a series of northeast trending major faults with minor cross faults of varying trend.

The magnesite is associated with dolomite, a magnesium silicate, calcite and silica in varying forms (calcedony, opal and quartz). Both the magnesite and the associated material are low in alumina and iron content.

The alteration is believed to have been due to ascending hot spring waters rich in magnesia that formed the magnesium silicate, dolomite, and the nodular magnesite. Later solutions deposited the various forms of silica that cut or replaced the earlier minerals.

The magnesite forms dense white nodules and is also found in lenticular veins as large as 12 feet wide and 100 feet long. The nodules and veins have a cauliflower-like surface. Much of the nodular magnesite is hard and flinty, with a conchoidal fracture. It is generally so hard that fresh surfaces cannot be scratched with a knife blade. The areas containing abundant nodules of magnesite are all small, generally less than 100 feet across the outcrop.

10-11-12

REPORT ON THE PROGRESS OF THE WORK DURING THE YEAR 1912

GENERAL STATEMENT

The work of the Committee during the year 1912 has been largely confined to the study of the various reports received from the different departments of the Government, and to the preparation of a report on the progress of the work during the year.

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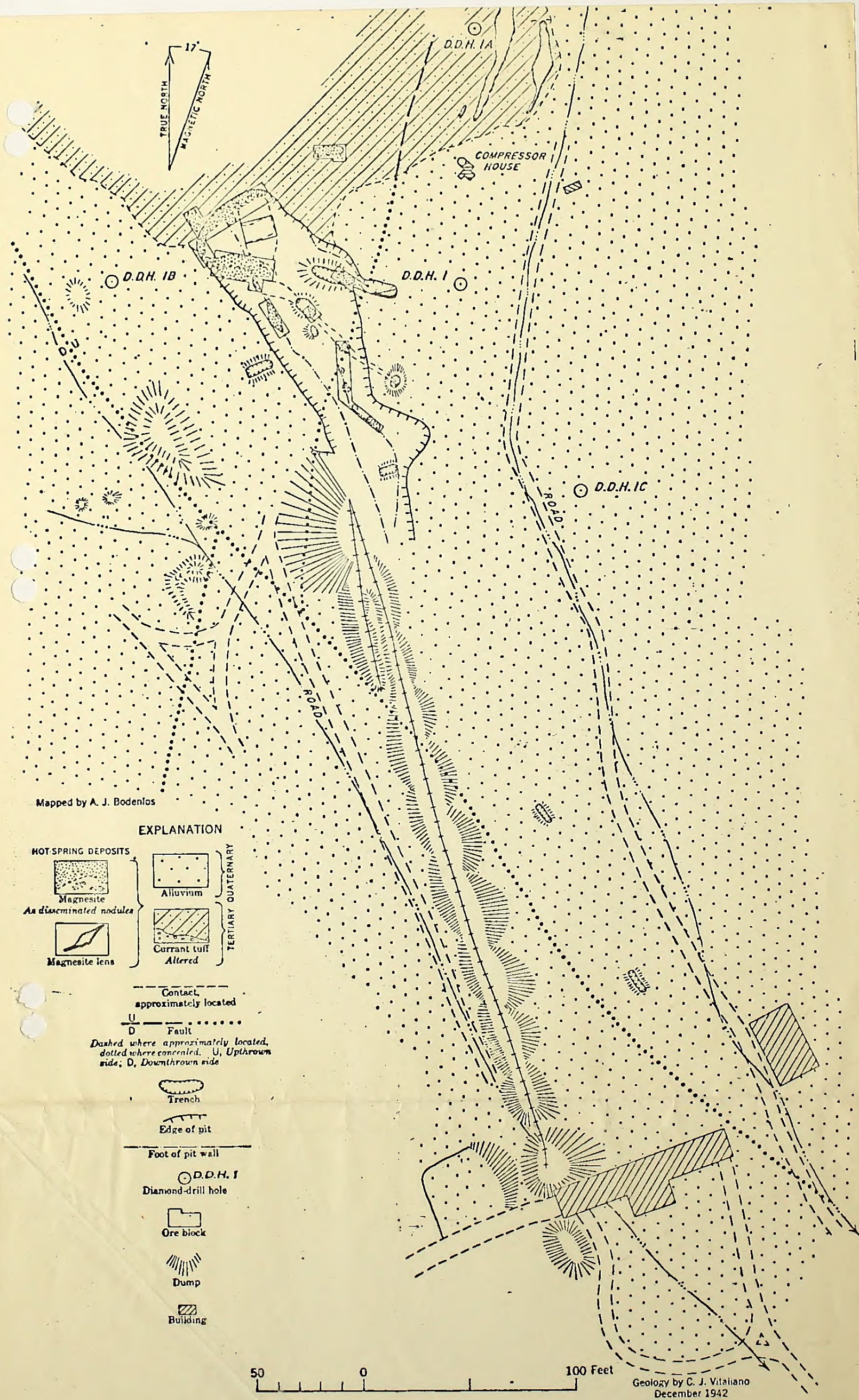
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GEOLOGIC MAP OF THE ALA-MAR PIT, CURRANT CREEK DISTRICT

POTENTIAL FOR DEVELOPMENT:

The entire mineral district has an estimated 10,000 tons of commercial grade magnesite (about 40% MgO). An additional 350,000 tons of magnesium silicate bearing material might eventually have commercial significance.

Because of the small size of the mineralized areas, irregularity of the deposits, the difficulty of distinguishing the magnesite from the altered tuff host, and high rate of waste to ore (8 to 1), it is doubtful that these deposits will be exploited in the foreseeable future.

If exploitation should occur, it would likely be by surface mining methods and would involve only small areas.

COMPANIES OR CLAIMANTS ACTIVE IN AREA:

None known at this time.

REFERENCES:

1. U.S.G.S. Bull 978-A, 1951, Magnesium-Mineral Resources of Currant Creek District.
2. G.S.A. Bulletin, Vol. 79, No. 12, Dec., 1968. p. 1703-1726
(Excellent map of White Pine-Grant Range-Horse Range, area on fringe of mapped portion).
3. Field examination on 4/25/72 by R. T. Webb and F. B. Mullin.

REPORT OF THE GOVERNMENT

The results of the investigation conducted by the Department of the Interior, Bureau of Land Management, in the year 1907, are as follows:

During the year 1907, the Department of the Interior, Bureau of Land Management, has been engaged in the investigation of the public lands of the United States, and has been successful in securing a large amount of information regarding the same.

It is estimated that there are about 1,000,000,000 acres of public lands in the United States, and that about 100,000,000 acres of these lands are now being used for agricultural purposes.

REPORT OF THE GOVERNMENT

How much is this land?

REPORT

1. U.S.A. Survey, Vol. 1, p. 1, 1907, Department of the Interior, Bureau of Land Management.

2. U.S.A. Survey, Vol. 1, p. 1, 1907, Department of the Interior, Bureau of Land Management.

3. U.S.A. Survey, Vol. 1, p. 1, 1907, Department of the Interior, Bureau of Land Management.

Mining District: BUTTERFIELD MARSH
(Sodium)

GENERAL BACKGROUND:

Railroad Valley is a typical desert basin extending for 100 miles in a north-south direction and having a width of from 10 to 20 miles. Its drainage area is about 6,000 square miles and the flat central portion has an area of about 200 square miles. The Butterfield Marsh area is in the lowest portion of the valley and has an area of about 40 square miles. During 1912-1914, the Railroad Valley Company drilled seven holes from 745 feet to 1,204 feet deep. The company was in search of potash minerals. They failed to find potash. The holes were drilled in the vicinity of T. 7 N., R. 56 E.. Shell Oil Company drilled a well in Sec. 2, T. 7 N., R. 56 E.

GEOLOGIC AND TECHNICAL DATA:

Butterfield Marsh is commonly covered with a thin crust of salt from which some production was made for use at the mills at Tybo. During the drilling done by Railroad Valley Company, gaylussite (hydrous sodium-calcium carbonate) was encountered in three holes. One hole penetrated 194 feet and another 127 feet of the mineral. Shell encountered considerable thicknesses of gaylussite in the well drilled in T. 7 N., R. 56 E.. Sodium-calcium carbonate is used in a multitude of chemical processes.

POTENTIAL FOR DEVELOPMENT:

There is a large tonnage of the gaylussite present in the Butterfield Marsh area. Development of these resources is unlikely in the near future because of the remoteness of the deposit and large volumes of material much closer to the market. Development would be through wells should it take place. Adequate controls would be possible through the leasing system to insure protection of other resource values.

PARTIAL LIST OF COMPANIES OR CLAIMANTS ACTIVE IN AREA:

None known at this time.

REFERENCES:

1. Univ. Nev. Bull. No. 3, Vol. 45, 1951, pg. 47.
2. Nev. Bur. Mines Bull. 65, 1954, pg. 254.

Mining District: CURRENT
(Gold, Building Stone, Clay, Uranium)

GENERAL BACKGROUND:

This district includes four distinct commodities in four separate areas and with different geologic conditions. Each is discussed separately below:

I. THE GOLD POINT DEPOSIT (GOLD BEARING LEDGE GROUP)

GENERAL BACKGROUND:

The Gold Point deposit was first prospected in 1914-1915. Reported production of gold was \$4,278 from 590 tons of ore in 1940 by the Currant Creek Mining Company. Some unreported amounts of ore have been shipped. Workings consist of several cuts and four adits. During the field examination on April 25, 1972 a small jaw crusher and riffle on the property indicated a small amount of ore is being processed.

GEOLOGIC AND OTHER TECHNICAL DATA:

The Gold Point deposit explores a jasperoid, silicified zone in the Mississippian Joana Formation. Limonite stained shear zones in the massive gray limestones of the Joana have also been explored. Dumps from the main adit display jasperoid and limestone breccia fragments that show little visible signs of mineralization. A northerly trending shear zone has been explored by bulldozer work. This zone is about four feet wide and contains evidence of mineralization in the form of limonite and manganese oxides. One hypothesis is that the mineral carrying breccia was faulted downward 300 to 500 feet below the present outcrop and presumably below the present workings.

POTENTIAL FOR DEVELOPMENT:

The Gold Point property shows some potential for small scale gold production by underground methods. Large scale production is unlikely even if the down faulted breccia can be found. Continuing prospecting in the area is anticipated because of past gold production.

See map.

Notice is hereby given that the following property is being offered for sale at public auction on the 11th day of November, 1912, at 10 o'clock A.M., at the Court House in the City of New York, County of New York, to-wit:

One lot of land

Containing one acre and one-half more or less, situated in the City of New York, County of New York, and being more particularly described in the Declaration of Intention to Sell, which is on file in the Office of the Clerk of the Court in the City of New York, County of New York.

The lot is situated in the City of New York, County of New York, and is more particularly described in the Declaration of Intention to Sell, which is on file in the Office of the Clerk of the Court in the City of New York, County of New York.

For Sale at Public Auction

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II. EL PADRE QUARRY (Santa Maria Claims)

GENERAL BACKGROUND:

The El Padre Quarry consists of a 1,500-2,000 foot bench exposing a bed of tuff that is currently being mined for building stone. In the center of the bench, the most active part of the quarry, there is a small quarry with a 20 foot high working face and a 75 foot cut. The buff colored tuff is broken into irregular pieces (rubble) with approximate dimensions of 8 to 12 inches. The broken rock is packed in wire pallets for shipment. During the field examination on April 26, 1972, between 150 and 200 loaded pallets containing 200 to 300 tons of rock were stored on the site. A claim notice found indicated the Santa Maria No. 1 was relocated on September 18, 1968 by George Bosovich and Paul Menieke of Tonopah. The quarry appears to be considerably older than 1958 although recent work is apparent. A small two-room cinder block building with the roof gone was on the property.

GEOLOGIC AND OTHER TECHNICAL DATA:

The El Padre Quarry has been developed along a 25 foot thick bed of water lain vitreous tuff in the Tertiary Horse Camp Formation. It is underlain by a series of thin bedded argillaceous sandstone and shales that are grey-green to brown in color. This whole sedimentary series strikes N. 42°W. and dips 50° to the northeast. The tuff unit varies from white to buff to tan with red, yellow, and brown staining along fracture planes. The staining is clearly a function of downward percolating surface water which spreads laterally into the tuff bed leaving variegated streaks which gives these parts of the deposit a "wonderstone" appearance. The tuff is light weight and quite hard but displays no jointing or orderly system of fracturing. These sedimentary units appear to extend another 2,000 feet or so to the east of the present quarry.

POTENTIAL FOR DEVELOPMENT:

The El Padre Quarry will probably continue to be mined sporadically by surface quarrying. There is potential for surface disturbance on about 80 acres. The quarry site will probably expand laterally along the strike of the tuff bed as overburden removal becomes a problem. Building stone markets are typically sporadic and it is often possible to palletize good reserves for future market. Therefore, expect mining of this deposit to be spasmodic.

17. THE TOWN OF HOUSTON

GENERAL DESCRIPTION

The town of Houston is located on the Gulf of Mexico, about 25 miles from the mouth of the Gulf. It is one of the largest cities in the United States, and is the center of the oil industry. The town is situated on a low-lying area, and is surrounded by water on three sides. The town is divided into several wards, and is governed by a mayor and a city council. The town is known for its oil industry, and is the headquarters of many oil companies. The town is also known for its sports teams, including the Houston Oilers, Houston Astros, and Houston Rockets. The town is a major center of commerce and industry, and is one of the most important cities in the United States.

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III. CLAY DEPOSIT

GENERAL BACKGROUND:

The clay deposit just east of Currant is reported to contain kaolinite and alunite. Several carloads of the clay are reported to have been shipped several years ago to a pottery manufacturer in St. Louis. Two short adits and several small pits explore a clayey gouge zone. The white dump on these workings can be seen for a great distance. The workings are obviously old but appear to have been relocated many times. During the field examination on April 25, 1972, two location notices were found, the Casey-Chrisy claim in 1969 and the Dand claim in 1971 (see references).

GEOLOGIC AND OTHER TECHNICAL DATA:

The clay deposit is in reality a 30 foot wide white mylonitized gouge zone nearly along the bedding plane of limestone beds between the Devonian Guilmette Formation on the north and the Mississippian Chainman Formation on the south. The gouge zone represents a northwest trending, northeast dipping fault between the two formations. Along the edges of the gouge zone, zones of massive crystalline calcite have formed. The gouge zone is reported to contain impure kaolinite with some alunite.

POTENTIAL FOR DEVELOPMENT:

The clay deposit, because of its apparent impurities and small size will probably never be commercially mined. However, we can expect it to be continuously prospected and occasional truck loads will likely be removed for testing and market analysis.

IV. THOR URANIUM PROSPECT

GENERAL BACKGROUND:

The Thor uranium prospect was located in 1954 by local residents. Two shallow shafts, 45 feet and 25 feet deep, explore a radioactive fault zone. No uranium minerals were identified on the property during field examination on April 26, 1972. There has been no production from the claims and there is no evidence of recent work.

GEOLOGY AND OTHER TECHNICAL DATA:

The Thor group explores radioactivity along a north trending fault zone that dips steeply to the east. The zone is about two feet wide with prominent slickenside faces where it cuts Tertiary rhyolite (probably the Oligocene Railroad Valley rhyolite). The 45 foot deep shaft explores this zone but discloses no visible uranium mineralization. A second shaft 25 feet deep, located just north of the rhyolite, explores the Oligocene Blind Springs Formation and penetrates the upper grey, water lain sandstone into the red, coarse, basal conglomerate. The upper unit is light-green lacustrine sediments and the conglomerate is a fluvial deposit of coarse sub-rounded rhyolite fragments. No uranium minerals are identifiable. The rhyolite is reported to have strong radioactivity particularly on the smooth slicken sided fault faces.

POTENTIAL FOR DEVELOPMENT:

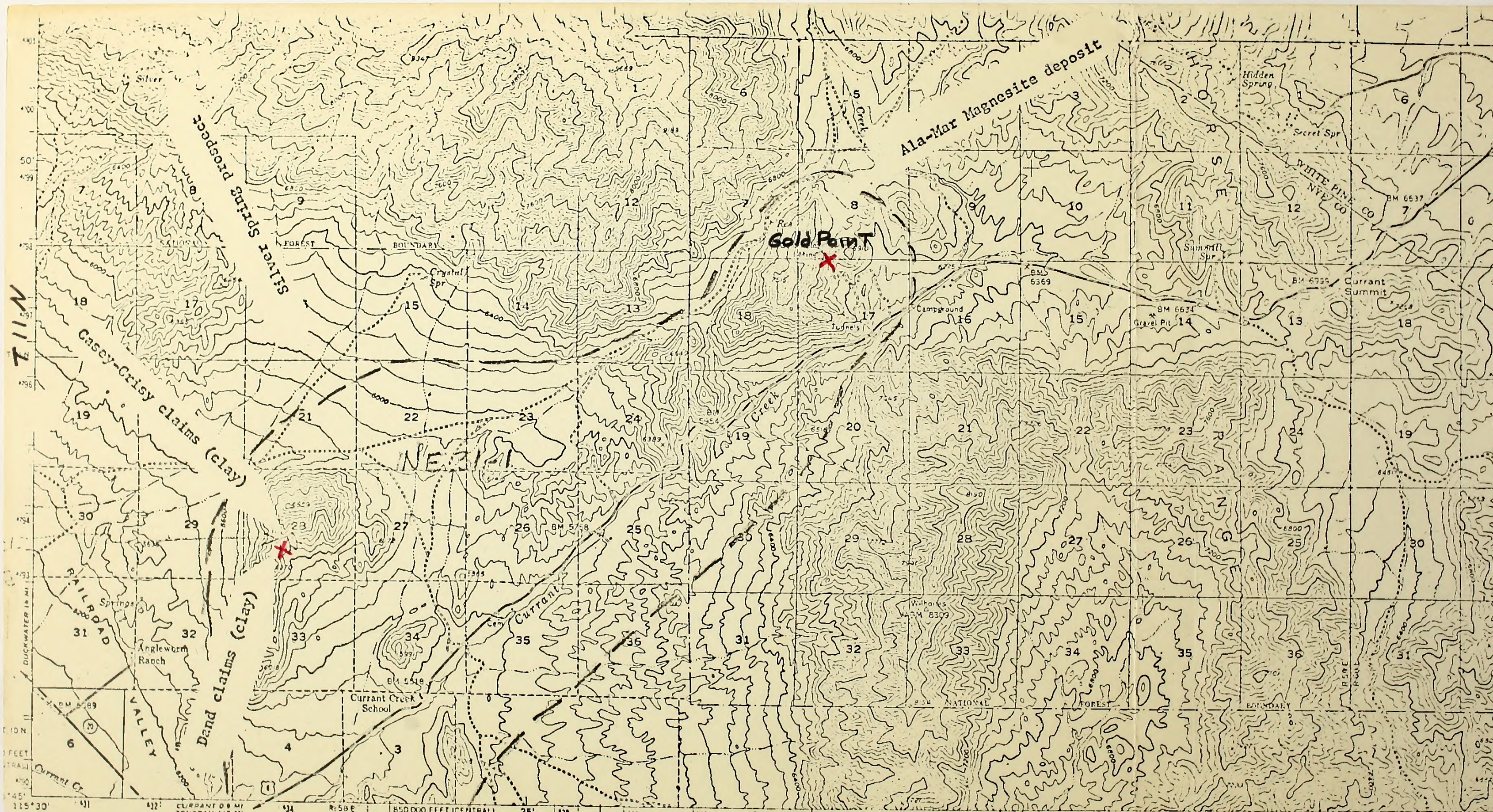
The Thor property probably contains no mineable uranium and will evoke scant interest from miners unless there is a dramatic increase in the price of uranium.

REFERENCES:

1. Univ. Nev. Vol 45, No. 3 p. 47-50
2. GSA Bull Vol 79 No. 12 P. 1703-1726 (excellent geol. of the White Pine-Grant Range near Curreant)
3. Field examination by F. B. Mullin & R. T. Webb on 4/26/72

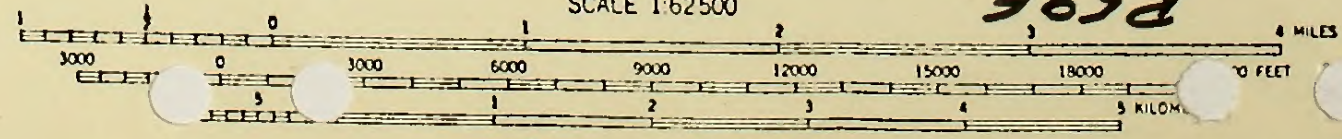
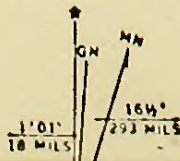
PARTIAL LIST OF COMPANIES OR CLAIMANTS ACTIVE IN AREA:

1. Dand claim loc. by Bill Arnold Located 10/23/71
 (clay deposit) Dellie Manzonie (no address)
 Ben Schama
 2. Casey-Chrisy claim loc. by Leu Alvey
 (clay deposit) Kelly Alvey (no address loc. 9/24/69)
 Jim Crowther
 Chris Crowther
- (1 and 2 are on the same location)
3. Thor #1 Loc. by Don Lani - Curreant Nev. Located 12/26/54
 (uranium) B. Frank Roberts, Sr. - Duckwater
 B. F. Roberts - Duckwater, Nevada
 4. Santa Maria No. 1 Loc. by Paul Meinecke - Virginia City Relocated on
 (El Padre George Boscovich - Tonopah 9/18/68
 Bldg. Stone Quarry)



RSB
Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS

Photography from aerial photos by multiplex methods
Photography taken 1954. Field check 1957
Map projection: 1927 North American datum
1:50,000-foot grids based on Nevada coordinate system,
central and east zones



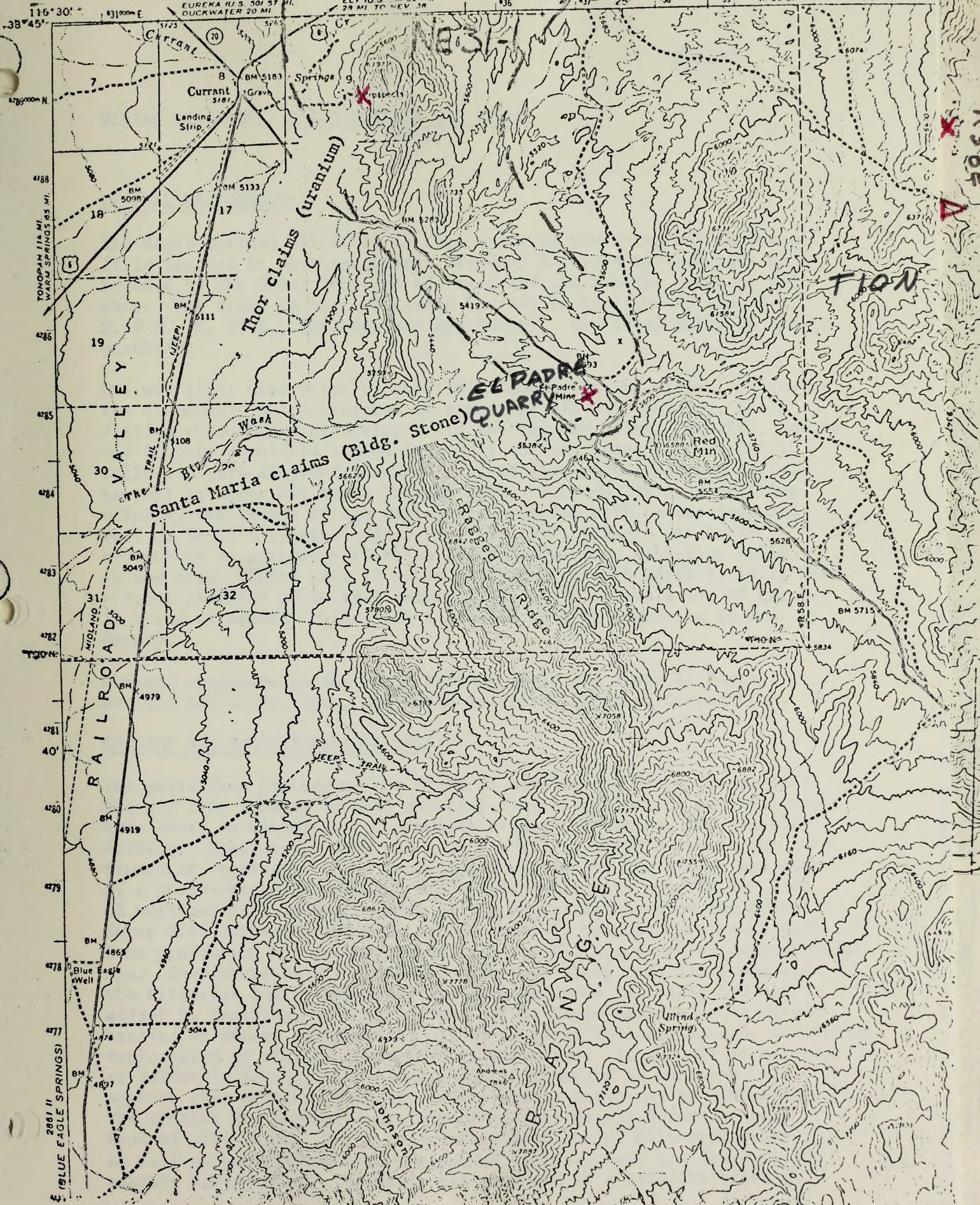
CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
Medium duty ——— Light duty ———
Unimproved dirt
U.S. Route (square symbol) State Route (circle symbol)



R58E

2961 IV
ICURRENT M



Mining District: EAGLE SPRINGS OIL FIELD
(Oil)

GENERAL BACKGROUND:

The Eagle Springs oil field is the only area producing oil in Nevada. It is located in north-northeast trending Railroad Valley which is bounded by the Grant Range on the east and the Pancake Range on the west. The field is more precisely located in Sections 35 and 36 of T. 9 N., R. 57 E., northeastern Nye County. Ely is 60 miles to the northeast.

Oil was first discovered by Shell Oil Company in May, 1954. Following the discovery, which produced at a rate of 275 BBls per day, Shell drilled three other producing wells and ten dry holes. In 1963, Texota Oil Company completed a producing well on land farmed out to Shell. Following this discovery, Texota drilled five more producing wells, as well as three dry holes through 1967. Through Texota's drilling efforts, the limits of the field were extended both to the east and west of Shell's original discovery. In 1965, Western Oil Lands brought in an outpost well which led to three more producing wells in the area. There were 13 wells producing through March 1, 1971, with a total recorded production record of 2,440,923 barrels (42 US gal.). In terms of mineral value, oil is second only to magnesite in Nye County.

Current producers in the Eagle Springs field are James L. Davis, Western Oil Lands, Inc., and North American Resources Corporation.

GEOLOGY AND OTHER TECHNICAL DATA:

The subsurface geology of the field is complicated and controversial. The oil trap appears to have resulted from a combination of impermeable beds above an unconformity, porosity changes, faulting, and possibly folding. Impermeable beds and younger "valley fill" overlies the truncated reservoir beds. Producing horizons are cut off on the east by a north-northeast trending high-angle fault with over 10,000 feet of vertical displacement. Most of the production is from the Eocene Sheep Pass formation and from porous zones in Oligocene volcanic tuff. Some production has been produced from the Ely Limestone of Pennsylvanian Age. Several wells are producing from both Sheep Pass limestone and the Oligocene tuff. Pay zones are discontinuous laterally and are offset by faulting. The age of the oil at Eagle Springs has a direct bearing on future exploration. If it is early Tertiary in age, additional exploration of similar formations is indicated. If the oil is Mesozoic or Paleozoic in age, then older formations should be explored. It appears that Tertiary Mesozoic and Paleozoic rocks may be productive. The central and northern portions of eastern Nevada offer the best hope of production. Thick sedimentary sections of paleozoic rocks, as well as petroliferous formations of Tertiary Age, are found in the eastern Nevada area. The crude oil produced is a paraffine based oil

THE HISTORY OF THE
1801

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The first volume of this work is the only one containing all the facts of the history of the country from the first settlement to the present time. It is a work of great value and interest to all who are concerned with the history of the country. The second volume contains the history of the country from the first settlement to the present time. It is a work of great value and interest to all who are concerned with the history of the country.

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with high asphaltene content. Consequently, it has a high pour point (75°) and API gravity of 26-29°. The sulfur content is 1.7%. There is a low gas/oil ratio. Bottom hole temperatures of 200°F at 6,000 feet aid in production, as it is necessary to heat the oil for ease in transportation.

POTENTIAL FOR DEVELOPMENT:

Further extension of the Eagle Springs oil field is not anticipated. The limits of the field have been well defined. Continued leasing is to be expected in the Railroad Valley area. The presence of oil is known in the area; consequently, there will be continuing activity by oil operators using geophysical techniques and drilling methods to find the oil.

The on-the-ground activity will continue to be a major factor in surface management in the Railroad Valley area. Problems may arise regarding the access and location of drill sites. One percent or less of the effective oil and gas leases will result in on-the-ground activity. However, the Area Manager should be aware of any work that does take place and work with the operators to insure that any damages be kept to a minimum. In the event of a discovery, good housekeeping on the well locations is a must to prevent potential oil pollution of any surface waters. Most oil operators will cooperate to keep off-site damages to a minimum.

CURRENT PRODUCERS:

1. James L. Davis, 21 Boyd Rd., Pleasant Hill, Calif. (Producer)
2. Western Oil Lands, Inc., P. O. Box 5337, Reno, Nev. 89503 (Producer)
3. North American Resources Corp., 1162 San Jacinto Bldg., Houston, Texas 77002 (Producer)

REFERENCES:

1. Nev. Bur. Mines Report 18, p. 21.
2. Bull. 65, p. 54-55-56.
3. 35th Report of Nev. Bur. Mines, State Insp. of Mines, p. 100.
4. John Schilling, Exec. Sec., Nev. Oil and Gas Commission, c/o Nev. Bur. Mines, Univ. of Nev., Reno, Nevada 89507.

Mining District: HAMILTON (WHITE PINE)
(Silver, Lead, Zinc, Oil?)

GENERAL BACKGROUND:

Since none of this mineral resource area is actually within the unit and almost entirely on National Forest only a brief abstract is included here.

The White Pine District, at the north end of the White Pine Range about 35 miles west of Ely, Nevada, includes approximately 270 square miles.

In 1868 rich silver ore was discovered on Treasure Hill, and from 20 to 40 million dollars worth of silver was recovered within 10 years. The ore occurred in a fracture zone at the top of the Nevada limestone near the apex of an anticline on Treasure Hill.

A great influx of people took place after the discovery and it is estimated that between 10,000 and 25,000 people were living in the area in 1868. Hamilton was, until a disastrous fire in 1885, the county seat of White Pine County. Within 10 years the silver ore was practically mined out, and the population steadily decreased. Since then there have been only sporadic mining operations west of Treasure Hill and on Pogonip Ridge in the lead-silver deposits.

GEOLOGIC AND OTHER TECHNICAL DATA:

The oldest exposed rocks are Middle Cambrian, and the bulk of the area is underlain by Paleozoic rocks totaling approximately 18,000 feet in thickness. The Cambrian rocks are mostly shale and thin-bedded limestone, and the Ordovician, Silurian, and Devonian sedimentary rocks are dominantly limestone and dolomite. Mississippian rocks include a thick sequence of carbonaceous shale and sandstone which is overlain by Pennsylvanian limestones. The Paleozoic section is overlain unconformably along the flanks of the ranges by Cretaceous (?), Eocene, and Miocene or Pliocene lake deposits. The most widespread Tertiary sediments are the Pliocene (?) bedded tuffs which surround the greater part of the White Pine Range. The southeast portion of the district was partially covered by Late Tertiary basalt which was extruded after the deposition of the tuff beds.

Pogonip Ridge was subjected to pre-Eocene normal faulting followed by probable Late Cretaceous and Early Tertiary orogenic disturbances throughout the district which formed folds and thrust faults. Eocene lake beds are disturbed along with the underlying Paleozoic rocks and furnish a partial dating for the folding and thrusting. Two small intrusions, one granodiorite and the other hydrothermally altered quartz monzonite, crop out on the west slope of Pogonip Ridge; they are post-thrusting in age; normal faulting followed the period of compression.

Pogonip Ridge, a domed structure about seven miles long and one and one-half miles wide, is bounded by three faults. The structural outline of the ridge was established prior to the period of compression, but the greatest uplift, about 15,000 feet relative to the surrounding rocks, occurred later.

Lead-zinc-silver ores occur in dolomitic rocks west of the silver zone and a small amount of chalcopyrite occurs close to the two intrusives. Folds in the upper Paleozoic rocks surrounding Pogonip Ridge and Treasure Hill might furnish structures favorable for oil accumulation. The only oil observed occurs in cavities within goniatites in the White Pine formation.

POTENTIAL FOR DEVELOPMENT:

Prospecting will occur in areas surrounding the White Pine Hamilton District. Most likely targets are adjacent to the intrusives. Prospecting for oil and gas will continue in areas where massive carbonates may be covered with alluvial material.

PARTIAL LIST OF COMPANIES OR CLAIMANTS IN THE AREA:

REFERENCES:

1. Nev. Bur. Mines Bull. 57, 1960, Field examination by Mullin and Webb on 4/27/72.

Mining District: UNKNOWN (GIBELLINI MINE, BISSONI VANADIUM PROSPECT)
Manganese, Vanadium, Zinc, Nickel, Molybdenum

GENERAL BACKGROUND:

The Gibellini Mine was originally located in 1942 as the Black Iron No. 1 by Louis Gibellini of Eureka. The mine contains several open cuts, a 176 foot adit, a 305 foot inclined shaft, and over 1,200 feet of drifts and crosscuts. Manganese was apparently mined successfully during World War II. Evidence of recent survey and sampling was noted at the mine entries during a field examination on 4/27/72.

The area to the south of the Gibellini Mine (along the crest of the Fish Creek Range) has been extensively prospected by bulldozer cuts, roads and a fairly recent churn drilling program. This prospecting appears to be some of the efforts made to develop the Bissoni vanadium prospect. There is no record of production from the Bissoni prospect.

Several groups of claims blanket the area and appear to have been relocated several times. These include the Sand group and the Van group, located or relocated in 1966 and 1969.

GEOLOGIC AND TECHNICAL DATA:

The Gibellini Mine follows several pipe shaped bodies of psilomelane and pyrolusite which display prominent slickensides of diverse orientation. The host rock is shattered Devonian limestone of the Nevada formation. The mineral occurrences are immediately adjacent to an eastwest fault that has shattered and displaced the limestone formation. Surface evidence of this and other east-west trending faults is displayed by more rapid erosion forming saddles and washes.

The manganese ores are reported to contain appreciable zinc, nickel, and a little cobalt, copper, vanadium and molybdenum.

The Bissoni claims are located in an area that has been mapped as a western facies of the Devonian and are reported to be rich in vanadium, zinc, and molybdenum. The claims extend for a distance of six miles along a zone as much as a half mile wide.

Black shale beds in the Paleozoic rocks, particularly black shales of Ordovician, Silurian and Devonian Age commonly contain from 0.2 to 0.7 percent each of barium and vanadium. Although several deposits contain about equal amounts of vanadium and zinc. Other metals that are sometimes present in unusual concentration include molybdenum, nickel, lead and silver.

Samples taken from the deposit were reported not to be accurate enough to give a quantitative estimate of the tonnage and grade of V_2O_5 . There may be as much as 10 million tons of metal-rich rock but the average grade is not known.

Indications are that the deposits are of too low grade for commercial exploitation at this time. There will be continued efforts to estimate the potential of the deposit through additional sampling and testing.

POTENTIAL FOR DEVELOPMENT:

Because of the favorable geology and varied mineralization continuous exploration programs are to be expected. Production of vanadium, zinc, and molybdenum might take place within the next 15-20 years. These deposits would most likely be mined by a large surface mining operation.

Because of present day depressed prices for manganese and the abundance of foreign supplies, it is not anticipated that manganese will be mined at this location except in a national crisis.

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CONCLUSION

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REFERENCES:

1. Nev. Bur. Mines Bull 65, 1964, pgs. 118, 116
2. Field exam by R. T. Webb, F. B. Mullin Apr., 1972
3. MF 178, Prelim. Geol. Map of Eureka Co., 1961
- 4 USGS Prelim. open file on No. Nye Co.

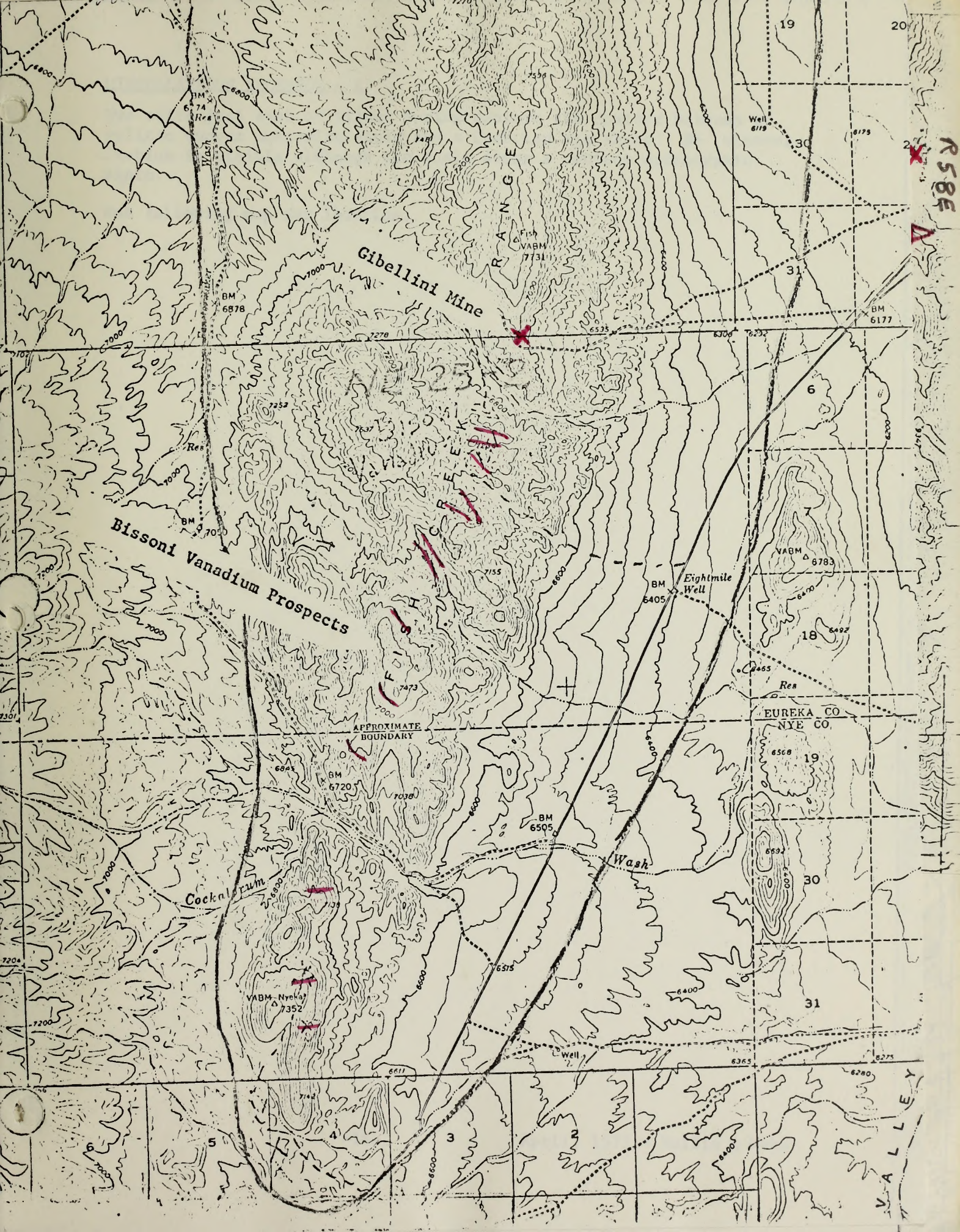
PARTIAL LIST OF COMPANIES AND/OR CLAIMANTS ACTIVE IN AREA:

- | | | |
|------------------------------------|----------------------|------------------|
| 1. Gibellini Mine | Black Iron #1 | Located 3/10/42 |
| (Louis Gibellini - Eureka, Nevada) | | |
| 2. E. L. Cleveland | Relocated Sand Group | Located 9/8/69 |
| 1201 Shadow Lane - Las Vegas | Relocated Van Group | |
| | Relocated Nav Group | |
| 3. H. B. Chesser | Relocated Sand Group | Located 11/15/66 |
| Box 889 - Reno, Nev. | Relocated Van Group | |
| | Relocated Nav Group | |
| 4. Bissoni Bros. Vanadium Mine | | |
| Eureka, Nevada | | |

1. New York, New York, 1911, 115
2. Field notes by H. H. Wood, 1911, 115
3. 1911, 1911, 1911, 1911, 1911
4. 1911, 1911, 1911, 1911, 1911

LIST OF CONTRIBUTORS

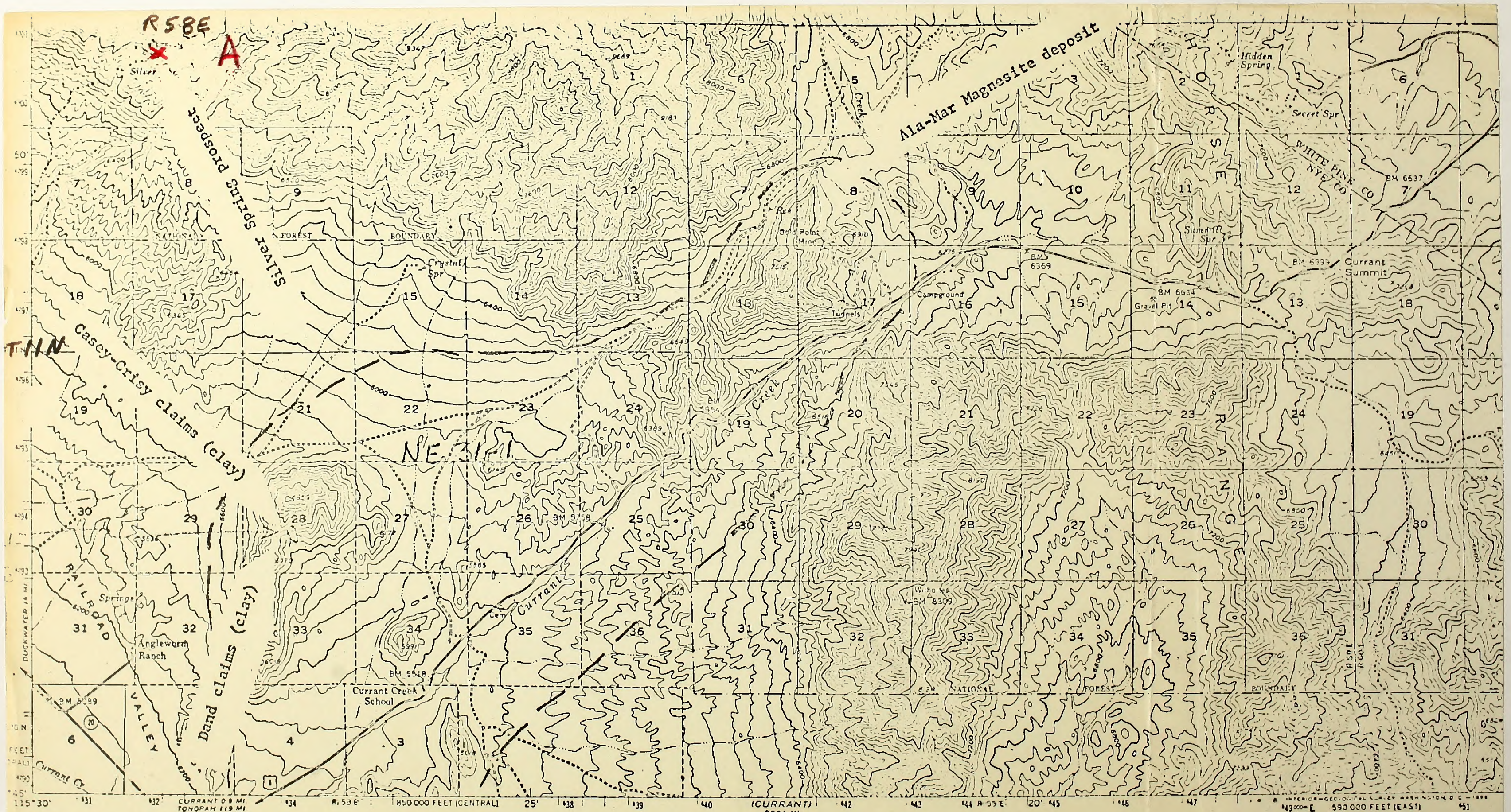
1. H. H. Wood, 1911, 115
New York, New York, 1911, 115
2. H. H. Wood, 1911, 115
New York, New York, 1911, 115
3. H. H. Wood, 1911, 115
New York, New York, 1911, 115
4. H. H. Wood, 1911, 115
New York, New York, 1911, 115



MISCELLANEOUS PROSPECT - A

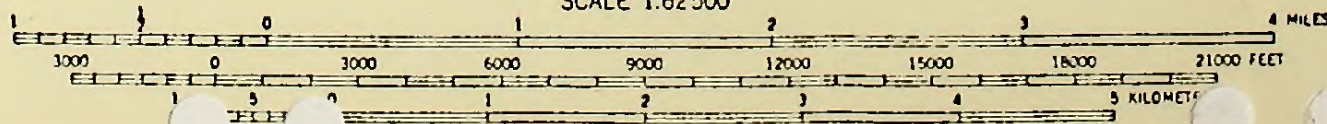
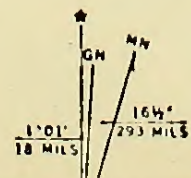
Two adits just east of Silver Spring explore the contact between an aplitic quartz monzonite stock and a Cambrian Age shale. No mineralization is visible although the shale shows a contact metamorphic skarn.

See following map for location.



Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS

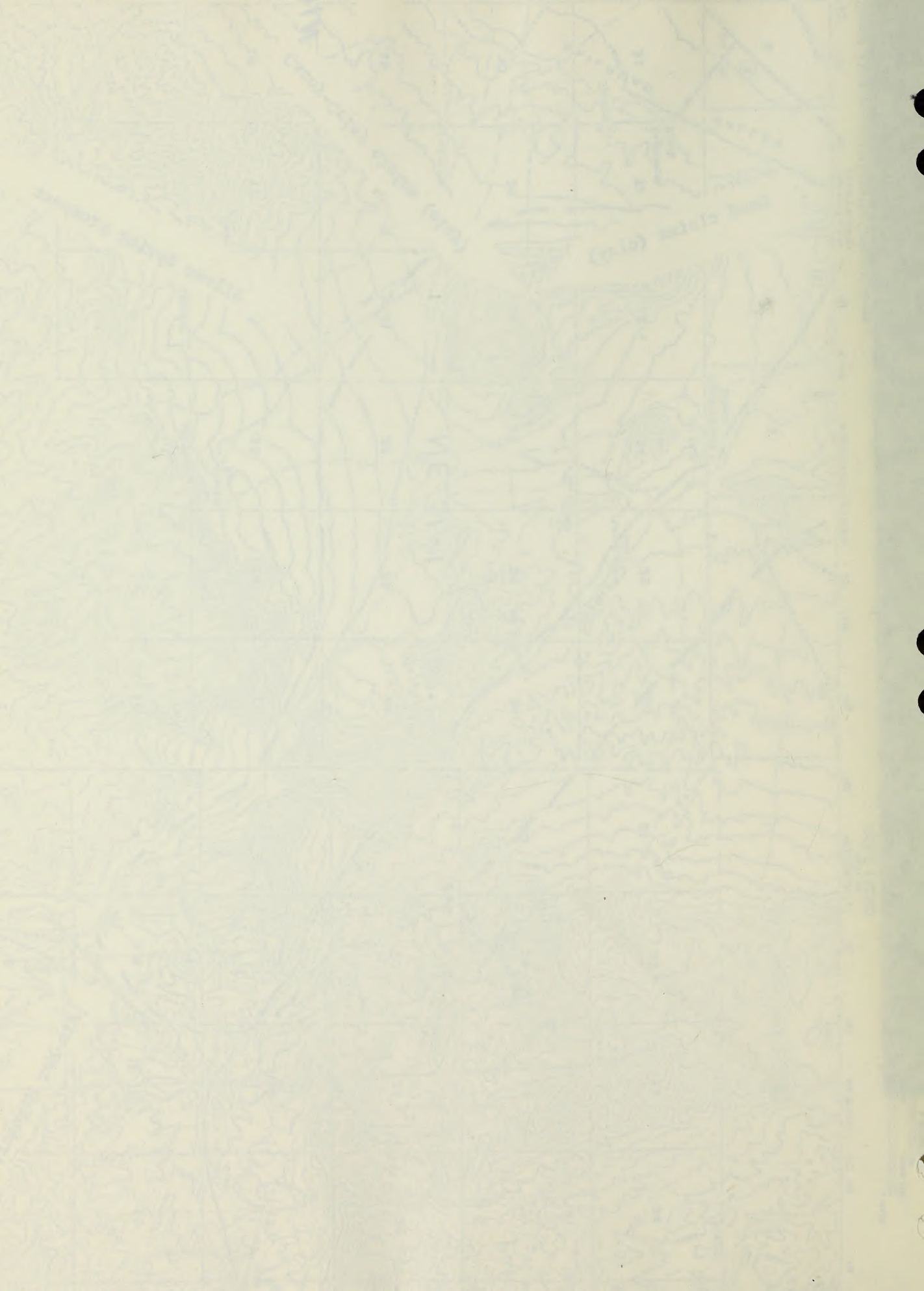
Photography from aerial photographs by multiplex methods
photographed in 1942 and 1954. Field check 1957
No project 1927. American datum
20,000 foot grid. Based on Nevada coordinate system,
central and east zones.



CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL



ROAD CLASSIFICATION
Medium duty ——— Light duty ———
Unimproved dirt
U.S. Route □ State Route ○

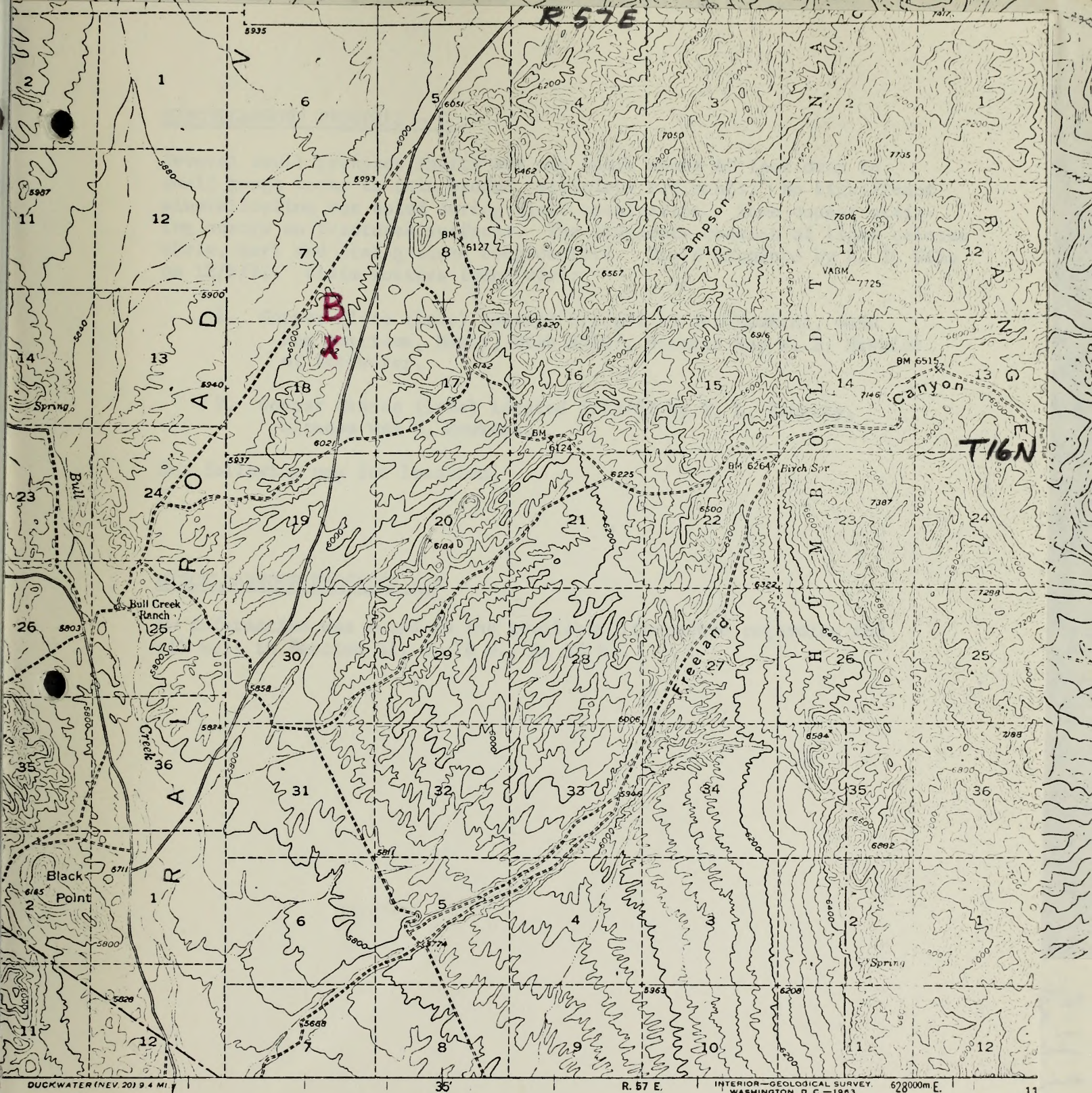


MISCELLANEOUS PROSPECT - B

A shaft in limestone, possibly the Joana limestone, is located southwest of Green Springs in approximately T. 14 N., R. 57 E., Section 18 at the base of a low hill. The limestone in which this shaft is located appears to be virtually free of mineralization. The claimants, George Ingram, Sr., and George Ingram, Jr. indicated they they were searching for platinum.

These individuals should be approached with caution. They are armed and indicated that they might "shoot first and ask questions later."

See following map for location.



DUCKWATER (NEV 201) 9.4 MI.

SCALE 1:62500

0 1 2 3 4 MILES

6000 9000 12000 15000 18000 21000 FEET

0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
FOR THE PURPOSES OF MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

NEVADA

ROAD CLASSIFICATION
1963

Light duty ——— Unimproved dirt - - - - -

○ State Route

GREEN SPRINGS, NE
N3900-W11530/15

1951

MISCELLANEOUS PROSPECT - C

Several small prospect shafts and one shaft about 40 feet deep in small gouge zones in thin bedded, silicious sediments. No significant mineralization was noted during field examination. Some copper staining occurs on fractured surfaces. The sediments consist of light colored shale, marl and fine-grained conglomerate. Field examined by R. T. Webb on 12/8/71. Claim notices found were:

1. Copper Plate (lode) located 9/1/69? by Joe Hawkins, 4450 Pan American, Murry, Utah 84107, Witness was W..E. Hawkins of Duckwater.
2. Copper Glance (lode) located 5/23/67 by T. L. Faherty, witness was W. Hawkins.

See following map for location.

MISCELLANEOUS PROSPECT - D

No information was found in the available literature regarding the oil well in Section 31, T. 16 N., R. 56 E..



Copper Plate & Copper Glance claims (Cu)

Copper Prospect
From - Duckwater #2NE Prelim. topo sheet
C located approx center of quadrangle
T. 12 N. R. 55 E. Sec. 32 NE

CAPABILITIES AND OPPORTUNITIES FOR DEVELOPMENT (STEP 4)

The following portion of the mineral analysis relates to the future mineral potential of the area. Areas of potential future mineral extraction are shown on the overlay according to mineral groups and mining methods.

Whenever attempts are made to outline future needs, the degree of accuracy of the prediction rapidly diminishes as the time element increases. Consequently, it should be understood that although the foregoing analysis is based upon the best information presently available, new extraction processes and/or unforeseen political events can change future mineral needs drastically.

As a general rule if the need or demand is great enough, the price of the mineral commodity will increase to the point that former marginal deposits can be operated. Also a price increase tends to spur exploration for new deposits.

The mineral resource areas delineated in this report are taken from a compilation of information contained in existing geologic reports and the mineral inventory of the area, and in some cases, field checks by the mineral examiner, and personal communications with company and Government geologists active in the area.

The areas designated as potential mineral extraction areas are noted where geologic literature indicates that the particular area may at some time in the future be exploited for a particular mineral or group of minerals. The overlay should in no way limit the potential of the area as there are mineral deposits yet to be discovered or known deposits whose limits will be extended through advanced technology and new discoveries.

Also included in the potential mineral extraction areas are lands necessary for tailings, plant sites, and other supportive activities of the mineral industry.

Prospects that are not situated in a mineral resource area but were visited and may, in time, have an impact on management activities are also included as miscellaneous prospects.

OUTLOOK FOR THE FUTURE:

The following section contains a brief outlook for individual mineral resources that are found within the unit. There are also mineral commodities included that are not known to exist in commercial quantities but are continuously being searched for. Due to the uncertainties involved with mineral discovery and present day economics, it was deemed advisable to include them here.

REFERENCES:

Engineering & Mining Journal, March, 1972, Vol. 173, No. 3
(Annual Outlook Volume - Metallics)

Mining Engineering, Ja., 72, Vol. 24, No. 1
(Annual Outlook Volume - Industrial Minerals)

U. S. Bureau of Mines Bulletin 650, 1970
(Mineral Facts and Problems)

Table 1—Comparison of US primary demand with US primary production for selected commodities: 1970, 1985, and 2000

Commodity	Units	1970 Actual primary demand	1970 Actual primary production	1985 Projected primary demand	1985 Projected primary production	2000 Projected primary demand	2000 Projected primary production
Aluminum	thousand ST	3,951	583	11,500	490	26,400	593
Asbestos	thousand ST	734	125	1,340	198	2,430	273
Beryllium	ST	NA	NA	820	60	1,770	82
Chromium	thousand ST	462	0	700	0	1,120	0
Copper	thousand ST	1,572	1,720	2,900	1,910	5,400	2,380
Gold	thousand tr oz	6,147	7,743	9,200	1,270	14,300	1,000
Gypsum	thousand ST	14,334	9,436	22,400	10,900	35,000	11,700
Iron	million ST	84	59	113	51	153	50
Lead	thousand ST	829	572	1,090	420	1,430	470
Molybdenum	thousand lb	49,104	111,352	96,500	140,000	188,000	184,000
Nickel	thousand lb	311,400	30,600	492,200	60,000	770,000	84,900
Rare Earths	ST	11,500	NA	16,000	20,800	22,000	30,800
Silver	thousand tr oz	73,100	45,000	124,000	39,000	210,000	40,000
Sulphur	thousand LT	9,132	9,549	16,500	11,800	30,000	14,500
Tin	LT	53,027	NA	70,000	2	90,000	0
Zinc	thousand ST	1,302	534	1,820	500	3,000	486

NA—not available.

Based on data contained in "First Annual Report of the Secretary of the Interior Under the Mining and Minerals Policy Act of 1970."

Projections are based on the past 20-year trend, 1951-1970. However, the effects of economic, technological, environmental, political, and

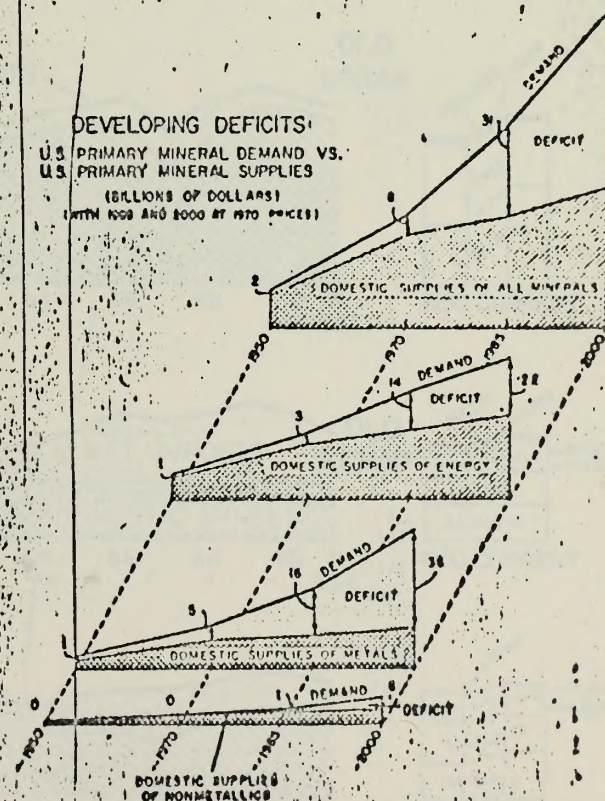
social factors may alter the supply-demand trends of a specific mineral commodity, and may also affect other commodities where interrelationships are involved. In such cases, significant departures from the 20-year trends could result.

Table 2—Net Imports as a percentage of 1971 US mineral demand, selected minerals (preliminary data)

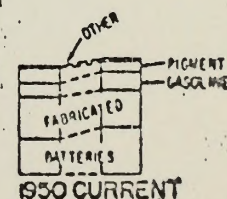
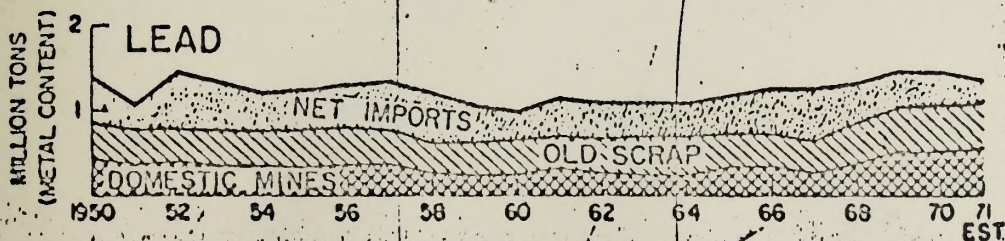
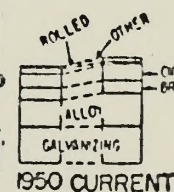
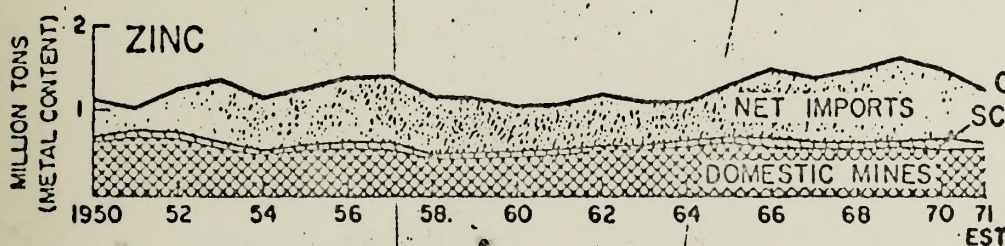
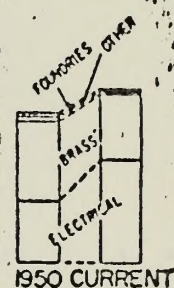
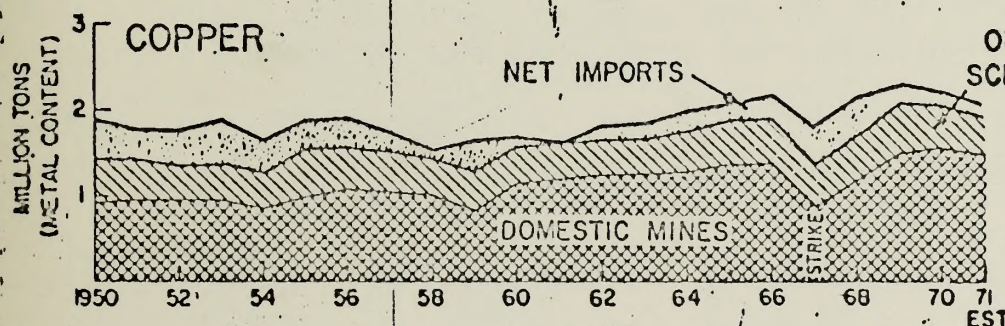
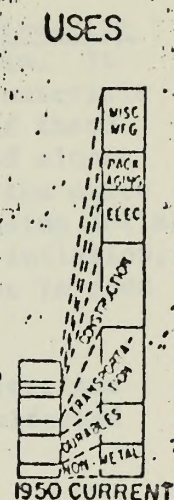
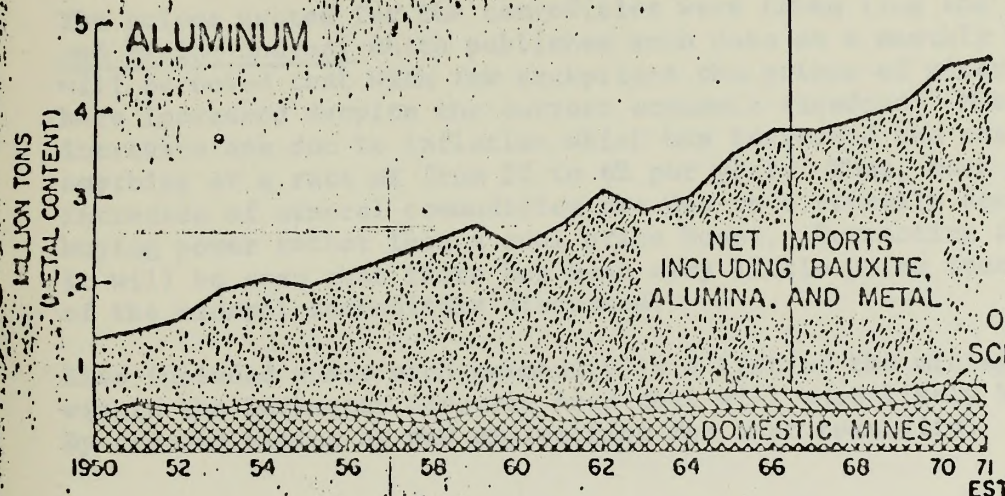
Percent	Commodity	Percent	Commodity
100	Thorium	76	Asbestos (common)
100	Titanium (rutile)	75	Cobalt
100	Asbestos (long-fiber, iron-free)	75	Platinum group metals
100	Diamonds (natural)	66	Nickel
100	Mica (sheet)	64	Tin
100	Quartz crystal (natural, electronic grade)	55	Columbium
		54	Antimony
100	Strontium	48	Gold
96	Manganese	45	Zinc
92	Aluminum (including metal content of bauxite and alumina)	34	Silver
		30	Iron
89	Chromium	28	Vanadium
80	Fluorine	18	Lead
		6	Copper

Based on data contained in "First Annual Report of the Secretary of the Interior Under the Mining and Minerals Policy Act of 1970."

**DEVELOPING DEFICITS:
US PRIMARY MINERAL DEMAND VS.
US PRIMARY MINERAL SUPPLIES
(BILLIONS OF DOLLARS)
(WITH 1980 AND 2000 AT 1970 PRICES)**



U.S. SUPPLIES AND USES OF ALUMINUM, COPPER, ZINC, AND LEAD



INTRODUCTION TO COMMODITIES:

In this section, every mineral commodity reported in the Duckwater Resource Area is discussed individually. The uses of these materials are discussed along with their present situation and probable future outlook.

The prices quoted for the commodities were taken from the Engineering and Mining Journal which publishes such data on a monthly basis. It will be noted that with few exceptions the prices of mineral materials have increased despite the current economic slowdown. Most of these increases are due to inflation which has increased the cost of almost anything at a rate of from 5% to 6% per year. Thus, most of the price increases of mineral commodities are due to a steadily decreasing dollar buying power rather than a real price boost. Correcting for inflation, it will be seen that there has been very little price increase in most of the mineral commodities discussed.

Also included under each commodity is a list of the mining districts within the Duckwater Resource Area that will most likely be affected by renewed mining or new exploration for that commodity.

OUTLOOK FOR THE FUTURE:

BARITE

The production of barite is keyed to its use by the oil companies as a weighing agent in drill muds. Drill muds consume 75% of all of the barite produced. Nevada barite has been historically tied into the California oil industry.

In 1970, the Nevada's barite production was estimated at 255,000 tons which was worth \$1.8 million. U. S. production was 942,000 tons (\$15.1 million). Most of this production was from the eastern states and was used in the east. The U.S. imported 470,000 short tons of barite in 1971 which was a decrease of 33% from the 706,000 short tons imported in 1970. Imports are expected to increase in 1972 and afterwards.

An upswing in oil exploration is expected in the '70's and this should moderately increase the use of barite. The main problem with domestic barite seems to be its non-competitive position in relation to imports.

New products from barite are being experimented with and if successful should increase the consumption of barite.

U. S. barite production will therefore probably increase slowly during the 1970's. Nevada's production should increase proportionately.

PRICES (DOLLARS PER TON)

<u>Type</u>	June, 1968	Feb., 1970	Feb., 1972	May, 1972
Chemical grade				
95% pure	\$20-20.50	\$20-20.50	\$22.50-24.50	no
96-97½% pure	\$25	\$25-26.50	\$26-26.50	change
99½% pure	\$45-49	\$45-49	\$55-78	
Drilling mud grade				
crude bulk	\$12-16	\$12-16	-	
ground	\$23-26	\$31-34	\$37-44	no change
Imported	\$10-14	\$16-19	\$18-22	\$27

As indicated above, barite prices have been increasing despite lower demand from the oil industry. Most of this is probably due to the more competitive position of domestic barite as the prices of imports goes up.

DISTRICTS MOST LIKELY TO BE AFFECTED:

NE 25-2

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

COPPER

The primary use of copper is for electrical wiring, motors, etc.. Electrical uses accounted for 50% of the U.S.'s annual consumption of copper. Other uses of the metal and the percent of the annual production are as follows:

Roofing, tubing, plumbing, etc.	16%
Copper alloys	10%
Small appliances	7%
Autos, railroads, ships, etc.	12%
Munitions	6%
Miscellaneous uses (chemical, coins, jewelry, etc.)	7%

The overall, long range outlook for copper is good. The short term is, however, cloudy. Production has been down for the past few years because of the generally depressed economy and the long strike within the industry. Production should pick up as the economy expands. Several large companies have ceased mining operations and are using up the large stockpiles collected during the strike to meet their demands.

Nationalization of U.S. owned mines in Chile and other countries will spur the exploration and development of low-grade copper deposits in the U.S..

Over the long run, copper production will increase both in the U.S. and world-wide. This increased demand and continued nationalization of deposits in other countries should eventually mean renewed exploration and perhaps production in Nevada.

PRICES (CENTS PER POUND)

	<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>June, 1972</u>
Domestic	42	56	50	52.50
Exported	46	69	48	-

The decrease in prices from 1970 to 1972 is due to the depressed economy. Higher prices can be expected in the next year or so. This will spur the production of copper.

DISTRICTS MOST LIKELY TO BE AFFECTED:

Expect continued prospecting along the Fish Creek Range near the Gibellini Mine NE 25-2 and near miscellaneous prospect (c) in T. 12 N., R. 55 E., Sec. 32.

FUTURE ADDITIONS AND COMMENTS:

A significant change in the way the U.S. is viewed by the world is the fact that the U.S. is now seen as a superpower. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe.

The production of the U.S. is now the highest in the world, and it is the only country that has the capability to project its power around the globe. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe.

Flourish, which is the most powerful of the U.S. is now the most powerful of the U.S. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe.

Comparison of the U.S. and the U.S.

	1970	1971	1972	1973	1974
Steel production	54.1	54.4	54.8	55.1	55.4
Aluminum production	12.7	12.7	12.7	12.7	12.7
Other metal production	4.7	4.7	4.7	4.7	4.7
Non-metallic mineral products	1.5	1.5	1.5	1.5	1.5
Chemical and allied products	1.1	1.1	1.1	1.1	1.1
Food and kindred products	1.1	1.1	1.1	1.1	1.1
Textile mill product	1.1	1.1	1.1	1.1	1.1
Other	1.1	1.1	1.1	1.1	1.1

The figures above are in thousands of short tons.

Since 1970, the U.S. has seen a significant increase in its production of steel, aluminum, and other metal products. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe.

Although production of the U.S. is now the highest in the world, it is the only country that has the capability to project its power around the globe. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe. This is due to the fact that the U.S. has the most powerful economy in the world, and it is the only country that has the capability to project its power around the globe.

OUTLOOK FOR THE FUTURE:

FLUORSPAR

A fluorspar shortage is looming due to increasing uses of fluorspar in basic oxygen steel furnaces, aluminum production, and the chemical industry.

The production of fluorspar is keyed to the chemical, steel, and aluminum industries which consume about 96% of all of the fluorspar mined.

Fluorine, which is derived from fluorspar, has many diversified uses in these industries either as a free element or in chemical compounds. Substitutes have been found for fluorine and fluorine compounds in some applications, but in many other applications no substitutes are known. These applications are expected to grow at about 4% for the next ten years.

Consumption of fluorspar in the U.S.,

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1975</u>	<u>1980</u>
Steel manufacture	541	546	588	654	673
Hydrofluoric acid	723	723	747	844	992
Other fluorine chemicals	478	473	500	603	824
Aluminum manufacture	245	250	247	241	168
Glass and enamel	30	30	30	30	30
Foundry uses	15	22	22	24	27
Other	25	37	39	45	56

The figures above are in thousands of short tons.

About 80% of the fluorspar used in the U.S. is imported, and foreign production is increasing in several countries that only a few years ago had no production to speak of. Large reserves have also been found in Alaska.

Although projections indicate that foreign sources will supply most of the U.S. demand for fluorspar, several companies have expressed interest in fluorspar deposits in Lincoln County, Nye County, and White Pine County. Allied Chemical and U.S. Borax are presently conducting exploration programs in the area. It may be that these companies want a kind of domestic "insurance" in case their foreign holdings are nationalized or depleted.

PRICES (DOLLARS PER SHORT TON)

	<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>
Metallurgical grade			
72½% pure	\$41.50-42.50	\$47.50-48.50	-
Pellets 70% pure	\$44	\$50.00-60	\$68.50
Acid grade 97% pure			
Carload lots	\$51	\$57.50	\$78.50-85
Less than carload lots	\$55	\$59.50	\$78.50-85
Ceramic grade			
97% pure	\$51	\$57.50	\$85
Imports			
European	\$44.50-47	\$47.50-50	\$27.50-73.50
Mexican	\$40-41	\$47-51	\$62-67

Mexican fluorspar has a decided advantage over domestic fluorspar at this time. Nationalization of the Mexican deposits may change the picture at any time, however.

DISTRICTS MOST LIKELY TO BE AFFECTED:

Currant NE 31-1
Hamilton NE 26-3

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

GEOHERMAL RESOURCES

Geothermal resources in the U. S. are by and large an unknown quantity. Their development in the near future is certain but where these new developments will take place is uncertain. The several geothermal areas now being investigated will be only the beginning of what appears to be a very promising new energy source. There are Hot Springs within the Duckwater Area. Although they have not yet been declared by the U.S.G.S. as being potentially valuable for geothermal resources, any hot spring area should so be considered. These areas will undoubtedly receive increased interest in the near future.

DISTRICTS MOST LIKELY TO BE AFFECTED:

All Hot Spring areas.

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

GOLD

Since the \$35/oz. ceiling on the price of gold has been lifted, the outlook for gold is excellent. New uses of the metal in addition to the traditional money and jewelry uses are increasing as technology advances. Electronic components using gold amounted to 25% of the nonmonetary gold consumption in 1968. This use and other uses such as microwave tubes, semi-conductors, electrical contracts used in high-vacuum or outer space environments, etc. are expected to increase rapidly in the next decade. For many of these applications there is no known substitute for gold.

Increased and more diversified use, and increased demand for gold should spur a moderate to strong expansion of gold mining and exploration. Increased prices will allow many marginal mines and deposits to be opened and operated economically.

Nevada is listed by the Bureau of Mines as having the third highest gold reserves in the nation. Most of these deposits are not mineable at \$35/oz. but increased prices will allow mining of some of these deposits, at least. Nevada can expect the reopening of some closed mines, and perhaps the location and exploitation of new deposits. The outlook for gold in Nevada is excellent.

PRICES (DOLLAR PER TROY OUNCE)

Free World Market

<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>
\$40.94	\$35.39	\$46.00

During the week of June 12, 1972, gold hit \$70/troy oz. on the European open market.

DISTRICTS MOST LIKELY TO BE AFFECTED:

Currant NE 31-1

FUTURE ADDITIONS AND COMMENTS:

Gold was being bought at \$54.89 per troy ounce in New York in May, 1972.

OUTLOOK FOR THE FUTURE:

LEAD

The demands for lead have increased in the past decade, but this demand has been more than met by domestic production. This trend will probably continue for the foreseeable future.

The major use of lead is still the manufacture of lead-acid batteries. Such batteries account for 35% of the total lead use in the U.S.

The record major use of lead is as an additive to gasoline. In 1968, this accounted for 18% of the lead used. This use, however, will probably disappear in the coming years due to environmental concerns about the use of lead in gasoline and its potential hazard to health. Low-lead and no-lead gasolines are already on the market and new regulations to remove all lead from gasolines by 1975 are being enforced.

The remainder of lead consumption in the U.S. is accounted for by a number of miscellaneous uses such as solders, bearings, free-milling steels, corrosion-resisting paints, and so on.

One of the formerly large uses of lead has already disappeared, that of lead-based paints. New titanium dioxide paints, acrylic paints, etc., plus the hazard of lead poisoning from eating the lead paints, lead to its demise. Lead poisoning among ghetto children remains a problem to this day, however.

Lead prices have dropped in the past few years and only extremely rich deposits are being mined. Much lead is also produced as a secondary product in the smelting of other more valuable metals. As the costs of mining increase, several mines may shut down unless the price of lead also increases. The future of domestic lead is therefore one of increased costs, lower prices, steady demand and steady supply.

The world outlook for lead is, however, somewhat different. The world demand for lead will probably increase steadily for the next 25 to 30 years. This demand will probably not result in higher U. S. production because of the high cost of mining in the U.S.. New sources outside of the U.S. will be exploited to supply this demand.

The outlook for lead production in the U.S. is, therefore, one of steady production from a few already producing mines. The opening of new mines is unlikely unless the uses of lead are expanded greatly and the demand and price increase sharply.

PRICES (IN CENTS PER POUND)

<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>June, 1972</u>
13	16.5	14	15.50-16

DISTRICTS MOST LIKELY TO BE AFFECTED:

Hamilton NE 26-3

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

MANGANESE

Manganese is used primarily in the production of steel and other alloys. About 84% of all the manganese used in this country is used in the production of such alloys. The rest of the U.S.'s consumption of manganese is used in the chemical, glass, and battery industries.

The domestic manganese market has been depressed since the U.S. Government stopped stockpiling the metal in the 1950's. Consumption has increased slowly, but foreign sources have more than filled these new demands. The combination of large foreign reserves and lower prices for imported ore has just about shut down manganese mining in the U.S.. To add to an already depressed market, the U.S. Government is planning to reduce its stockpile of manganese in the coming years. This may further reduce the price of manganese and make domestic exploration and mining even less probable.

Should our foreign supplies be cut off either by nationalization or during a major war, domestic manganese will be mined for the duration of the crisis. Even low-grade ores of this strategic metal were mined during W.W. II and Korean War. Government stockpiles were formed so as to provide a continuing supply of manganese until domestic mines could supply the increased demand.

PRICES (CENTS PER POUND)

<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>June, 1972</u>
28.85	31.25	33.25	33.25

DISTRICTS MOST LIKELY TO BE AFFECTED:

Bissoni Mine NE 25-2

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

MERCURY

In recent years the bottom has fallen out of the mercury market. Its use as a catalyst in plastic and vinyl production has been drastically curtailed due to the environmental hazards of mercury waste. With this drop in demand, there has been a drastic drop in mercury prices. Not only have many small marginal mines closed but some of the largest have also done so.

The production of domestic mercury has always been a tenuous operation due to severe competition from foreign mines. Most U.S. mines operate on a part time basis, producing when prices are high and closing when the prices drop.

Certain processes in which mercury is used need large amounts of mercury during the initial phases of plant production (i.e. large quantities of re-useable catalyst). A subsequent drop in mercury consumption after the plant is in operation follows. This sudden, short-lived, demand followed by almost no demand has led to the wide fluctuations in mercury prices seen in past years.

There is a steady demand for mercury in specialty electronic equipment where a liquid metal is needed. This demand will increase slowly in the future.

The outlook for mercury is fair on a world-wide scale but poor on the domestic level. Until the cheaper foreign sources begin to seriously deplete their reserves, only small sporadic mercury mining will occur in the U.S. Such production will occur in the larger mines and there is little likelihood of more than token production in Nevada.

PRICES (DOLLARS PER FLASK)

<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>June, 1972</u>
\$518-527	\$475-480	\$213.25	\$187-200

A flask of mercury weighs 76 pounds.

DISTRICTS MOST LIKELY TO BE AFFECTED:

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

MOLYBDENUM

Molybdenum has been caught in the same economic squeeze that has affected other steel additives. Steel production has been reduced due to the recession of the past few years and this has resulted in a decrease in the demand for molybdenum which is used in many steel alloys. Several mines and producers of molybdenum have been forced to close temporarily because of this.

The long range outlook for molybdenum is very good, however. New uses for the metal and increased demand for alloy steel both in the U.S. and abroad will push molybdenum production upward. Since the U.S. has about 60% of the free-world's reserves of molybdenum and is currently producing about 75% of the free-world's molybdenum, the industry is in an enviable position.

In Nevada, molybdenum will probably be produced as a by-product of other metal mining and smelting, notably the copper porphyry ores. If the demand pushes the price of the metal high enough, new mines geared to molybdenum as their primary product may be opened.

The uses of molybdenum are summarized below along with the projected demand for the metal in the year 2000. The first four uses are finished products that begin as molybdenum alloy steel. The figures are in thousands of pounds.

USE

	<u>1968 Consumption</u>	<u>(2000) Projected Consumption</u>
Transportation Equipment	16,500	45,000-72,000
Machinery and machine tools	13,400	38,000-55,000
Pipes and tubing	10,000	24,000-40,000
Electrical and electronic equipment	1,400	4,000-6,000
Chemicals, lubricants, pigments	4,500	15,000-28,000
Other uses	10,000	10,000-20,000

PRICES (DOLLARS PER POUND)

	<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>
99.95% pure metal	\$3.63-\$3.75	\$4.00	\$4.00
95% pure concentrate	\$1.62	\$1.72	\$1.72
Molybdenum trioxide	\$1.82	\$1.92	

DISTRICTS MOST LIKELY TO BE AFFECTED:

Gibelline-Bissoni Mines NE 25-2

FUTURE ADDITIONS AND COMMENTS:

CONCLUSION

With a worldwide shortage of oil and gas supplies, the need for alternative energy sources is becoming increasingly apparent. The conventional sources of energy, such as coal, oil, and natural gas, are being depleted at an alarming rate. It is therefore essential that we develop new energy sources that are renewable and sustainable.

The oil and gas reserves in Saudi Arabia are estimated to last for about 40 years. This is a significant amount of time, but it is not infinite. The world's demand for oil is growing rapidly, and it is only a matter of time before the reserves are exhausted.

The Department of Energy is currently working on a number of projects to develop alternative energy sources. These include solar, wind, and geothermal energy. The goal is to have a diverse energy portfolio that can meet the world's needs for the future.

RECOMMENDATIONS FOR FURTHER ACTION

The following recommendations are being made to the President and the Congress:

- 1. Increase funding for research and development of alternative energy sources.
- 2. Encourage the private sector to invest in alternative energy projects.
- 3. Establish a national energy conservation program.

APPENDIX A: LIST OF REFERENCES

OUTLOOK FOR THE FUTURE:

OIL AND GAS

With a world-wide shortage of oil and gas projected for the turn of the century, increased exploration will result. The unsettled foreign scene and increasing nationalization of oil and gas fields and increased demands for higher prices from foreign sources should spur increased domestic exploration.

The oil and gas potential in Nevada is uncertain. A steady exploration effort will be maintained and a few small fields may be discovered.

The Duckwater area has large areas containing thick sequences of rocks that are potentially valuable for oil and gas.

DISTRICTS MOST LIKELY TO BE AFFECTED:

The entire Railroad Valley area north of the Eagle Springs oil field will probably receive continued exploration efforts.

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

SAND, GRAVEL, AND STONE

Because of the low unit value of these materials, they are mined and processed as near to the market as possible. A haul of two or three miles could make a deposit non-competitive in relation to another deposit having a shorter haul.

Since most sand, gravel, and stone are used in the construction industry, markets are generally large towns that are undergoing expansion.

The Duckwater Unit has large reserves of sand, gravel and stone but they will not be utilized to any large extent due to their distance from the major user areas. Small operations may appear to supply local, small demands. If the demand for building stone increases, additional shipments may be made from the ElPadre quarry.

DISTRICT OR AREA MOST LIKELY TO BE AFFECTED:

Currant NE 31-1

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

SILVER

The demand for silver has increased greatly even though its historic use in coins has been diminished. New uses in electronics, batteries, etc. have pushed the demand for silver to new highs. For many of these applications there is no known substitute.

The supply of silver has lagged behind the demand and the consequent increase in price once the economy picks up should spur new exploration and mining of the metal. The price of silver will probably continue to fluctuate widely in the 1970's due to speculation and politics but should increase over the long run.

The fluctuation in price will probably result in some on and off mining operations for the short run, but as the price of silver increases more of these operations will stabilize and remain open.

Nevada can expect increased exploration for silver, sporadic mining for awhile, and then increased and steady production. The outlook is therefore good to excellent with some ups and downs.

PRICES (DOLLARS PER TROY OUNCE)

<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>May 31, 1972</u>
\$2.37	\$1.87	\$1.46	\$1.58

DISTRICTS MOST LIKELY TO BE AFFECTED:

Hamilton NE 26-3

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

SODIUM AND OTHER LEASABLE MINERALS

The demand for sodium and other leasable minerals will continue to increase in the future. As new products and new processes are developed by the chemical industry, new exploration and new mining will result.

The future of the sodium deposits in this unit is not as bright, however, largely due to the abundance of more accessible deposits which are close to the sources of demand.

The leasable minerals other than oil and gas include coal, potassium minerals, sodium minerals, phosphate, sulfur, and asphaltic minerals. Of these, only sodium and potassium have potential for future production in the Duckwater Resource Area.

Both sodium and potassium find uses in a large variety of industries and products. The largest of these are fertilizers, water softeners, soaps, and chemicals.

PRICES (CENTS PER POUND)

	<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>
Potassium (Potash)	26-104	33-90	35-70

Prices vary according to grade, compound, etc.. No figures for sodium are available.

DISTRICTS OR AREAS MOST LIKELY TO BE AFFECTED:

Butterfield Marsh SE 2-3

Other valley floors and oil lake bottoms also have potential.

FUTURE ADDITIONS AND COMMENTS:

As of 5/31/72 Potassium 33.75-43¢ per pound.

OUTLOOK FOR THE FUTURE:

TUNGSTEN

The tungsten market is at present depressed and several mines have shut down temporarily. This depression is due to the generally slow economic picture and decreased steel production which consumes most of the tungsten mined. Such steels are used where high temperature resistance is needed and where high hardness and toughness are required such as high speed cutting tools.

Looking beyond the present situation, the future holds great promise for tungsten. As the economy warms up and steel production rises, tungsten consumption will also rise. The recent three year agreement to limit imports of Japanese steel will give an extra boost to domestic tungsten mining.

The demand for tungsten is expected to rise faster than the rest of the economy until the year 2000. The outlook is, therefore, very bright.

PRICES (DOLLARS PER POUND FOR METAL, DOLLARS PER SHORT TON FOR ORE)

	<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>June, 1972</u>
Metal 98.8% pure	\$2.75	\$4.50	\$4.50	\$4.15-4.50
Metal 99.99% pure	\$4.60-5.44	\$4.91-5.75	\$5.43-6.94	\$5.43-6.94
Ore (Wolframite)	\$43	\$43	\$55	\$55
Ore (Scheelite)	\$43	\$43	\$55	\$55

The ores listed above are imported from other countries.

DISTRICTS MOST LIKELY TO BE AFFECTED:

Continued exploration throughout area.

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

VANADIUM

Three quarters of the vanadium consumed in the U.S. has gone into special engineering, structural and tool steels where it is used as an alloy to control grain size, impart toughness and inhibit fatigue. The other principal domestic uses have been in nonferrous alloys and chemicals. Since the mineral is so closely tied to the steel industry, it is caught in the same economic squeeze. Steel production has been reduced due to the recession of the past few years. This has resulted the same decrease in demand as for other materials used in steel alloys.

Increased demand for specialty alloy steels is expected to bring about a turn around in demand for vanadium. If the demand uses high enough deposits such as found in the Duckwater area may be brought into production.

PRICES

April, 1972 V_2O_5 \$2.12-2.21 per pound

DISTRICTS MOST LIKELY TO BE AFFECTED:

Bissoni prospect NE 25-2
The entire Fish Creek Range

FUTURE ADDITIONS AND COMMENTS:

OUTLOOK FOR THE FUTURE:

ZINC

The best known use of zinc is as the coating material of galvanized steel. It has, however, a multitude of other uses including the manufacture of brass and bronze, electrical equipment, pigments, dry cell batteries, and bearings.

At the present time the supply of zinc is greater than the demand. Plastics and aluminum have replaced zinc in a number of its former applications, thereby decreasing the overall demand for zinc. A drawdown of Government stockpiles of as much as 50,000 tons per year for ten years is being considered. It will probably begin in 1972 or 1973. This drawdown will further depress the zinc market. Several mines and smelters have already closed and more may close in the future.

Presently operating mines and the Government stockpiles will meet the demand for zinc in those applications for which substitutes have not been found including a projected moderate expansion of such products.

This slowly increasing demand, met by presently operating mines and Governmental stockpiles, should last until the mid 1980's. After that time the projected world and domestic demand should out strip production. This may lead to new exploration and exploitation of new deposits.

The outlook for zinc, therefore, is one of a more or less depressed market in which demand and supply are balanced. Production from new deposits or mines will probably not be started until the 1980's or 1990's.

PRICES (CENTS PER POUND FOR METAL, DOLLARS PER LONG TON FOR ORE)

	<u>June, 1968</u>	<u>Feb., 1970</u>	<u>Feb., 1972</u>	<u>June, 1972</u>
Metal	13.5-14¢	15.5-16¢	17¢	18¢
Ore	\$84	\$100	-	-

DISTRICTS MOST LIKELY TO BE AFFECTED:

Bissoni Prospect	NE 25-2
Hamilton	NE 26-3

FUTURE ADDITIONS AND COMMENTS:

BLM

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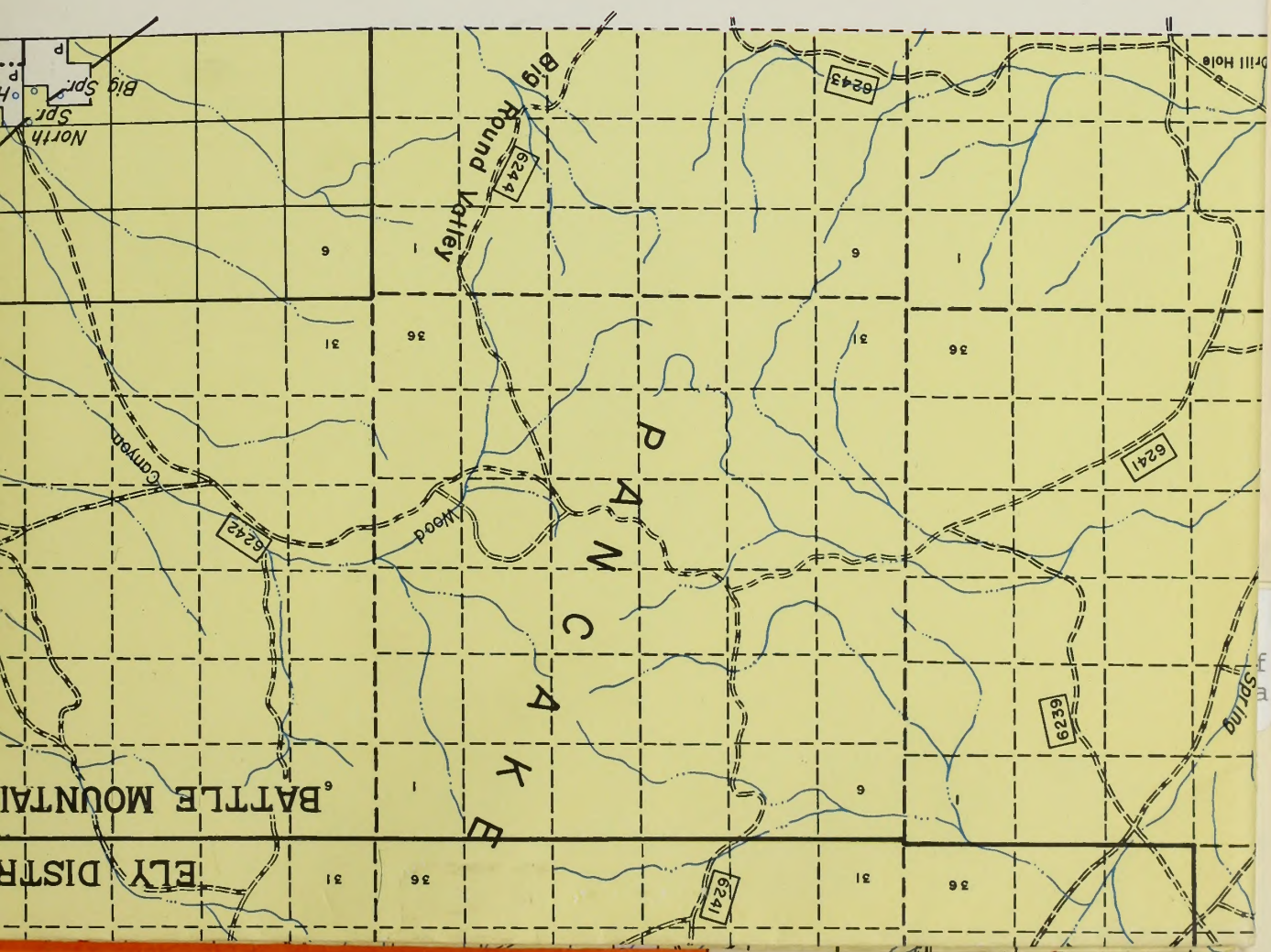
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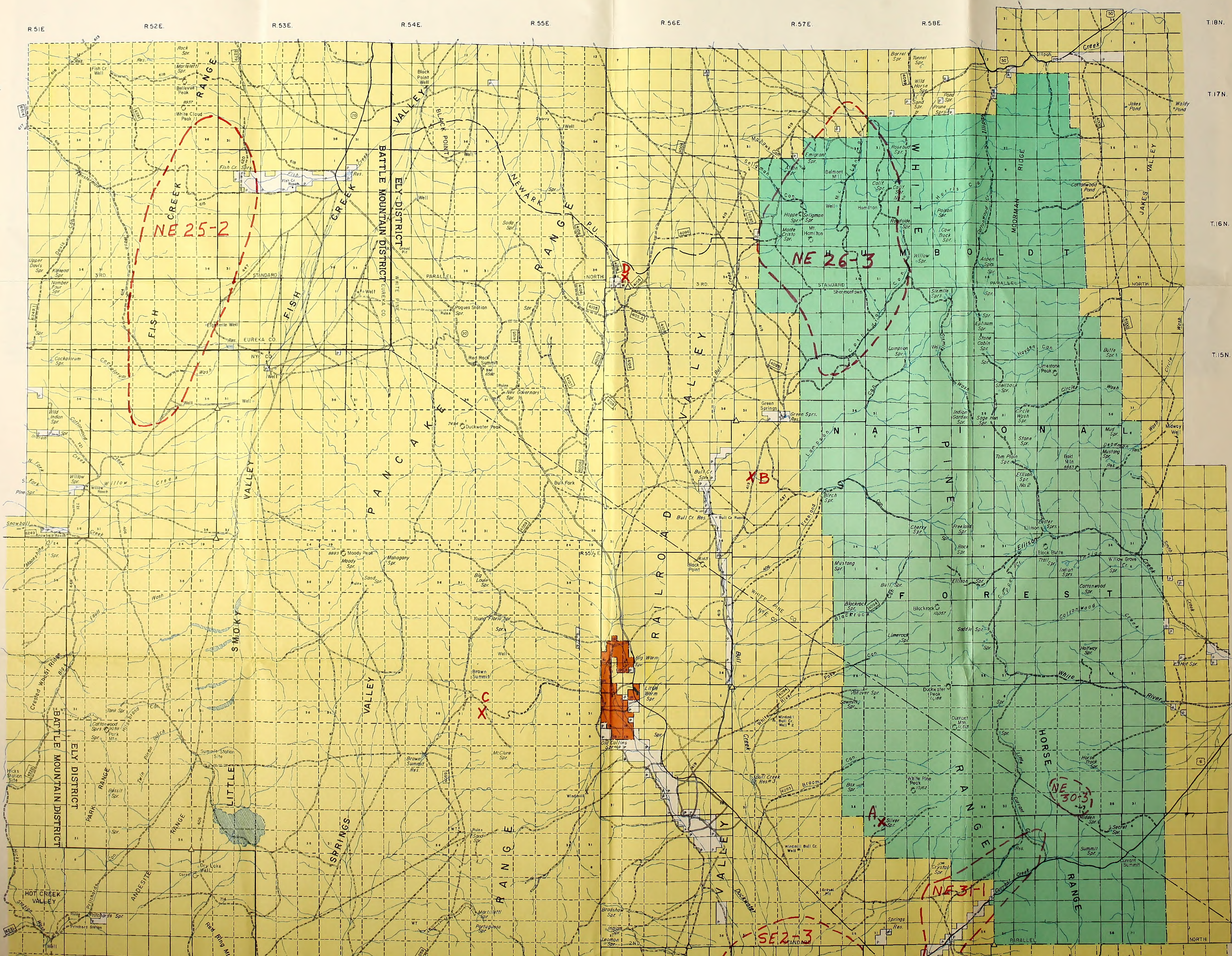
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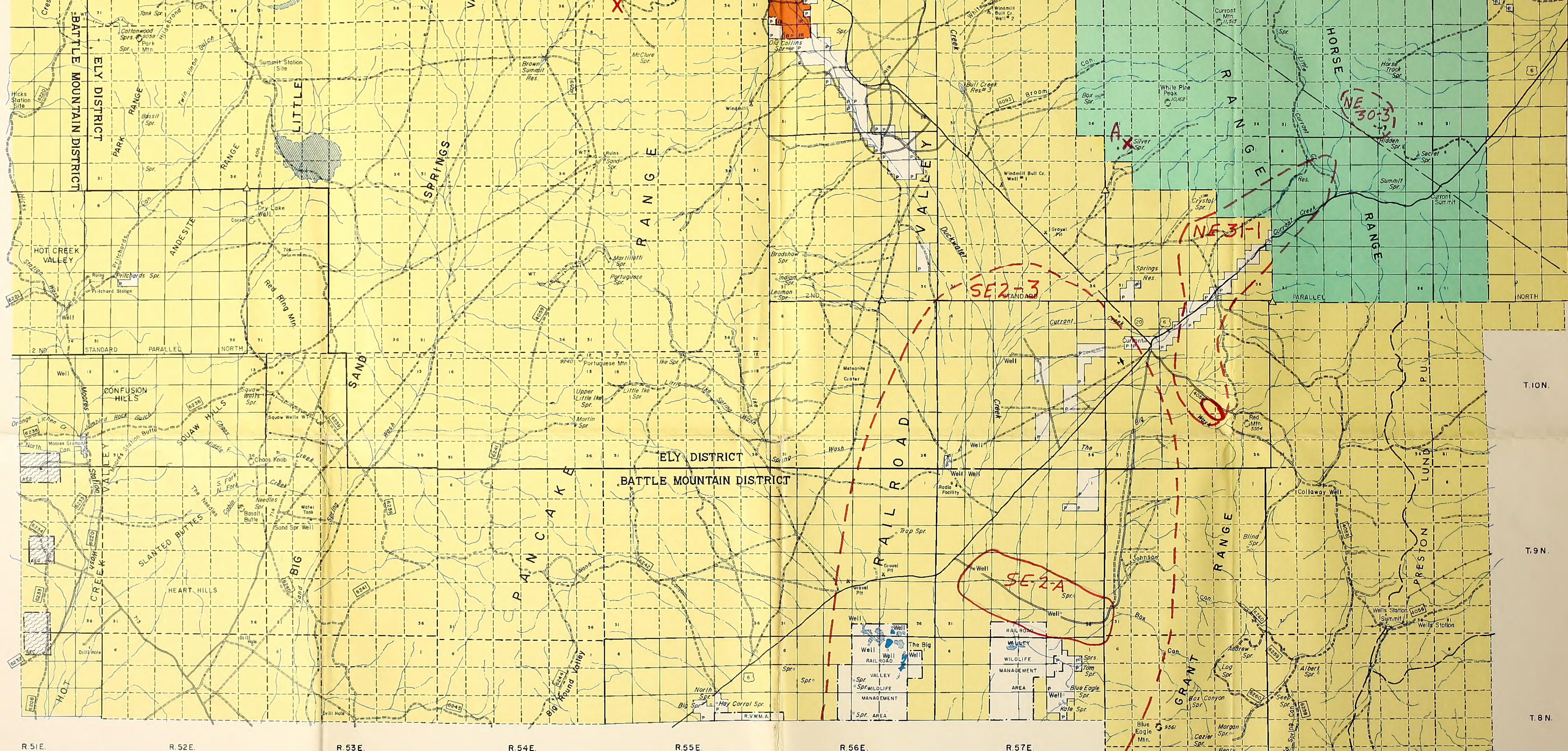
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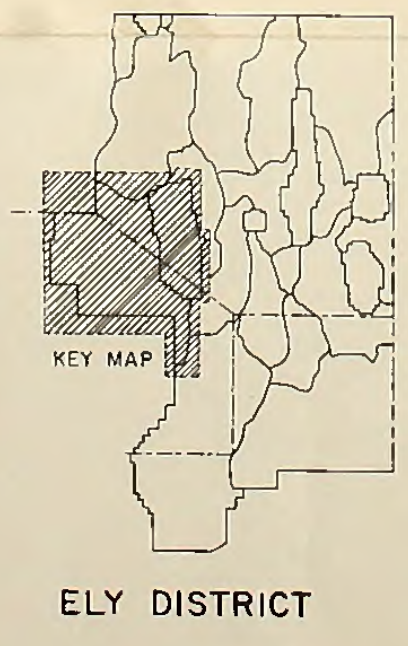


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PRESENT SITUATION MINERAL INVENTORY OVERLAY

- INDICATED MINERAL AREA
(NUMBER REFERS TO NARRATIVE)
- MINERAL RESOURCE AREA
- MISCELLANEOUS PROSPECTS

SE2-3
XC



DUCKWATER PLANNING UNIT ELY DISTRICT, NEVADA

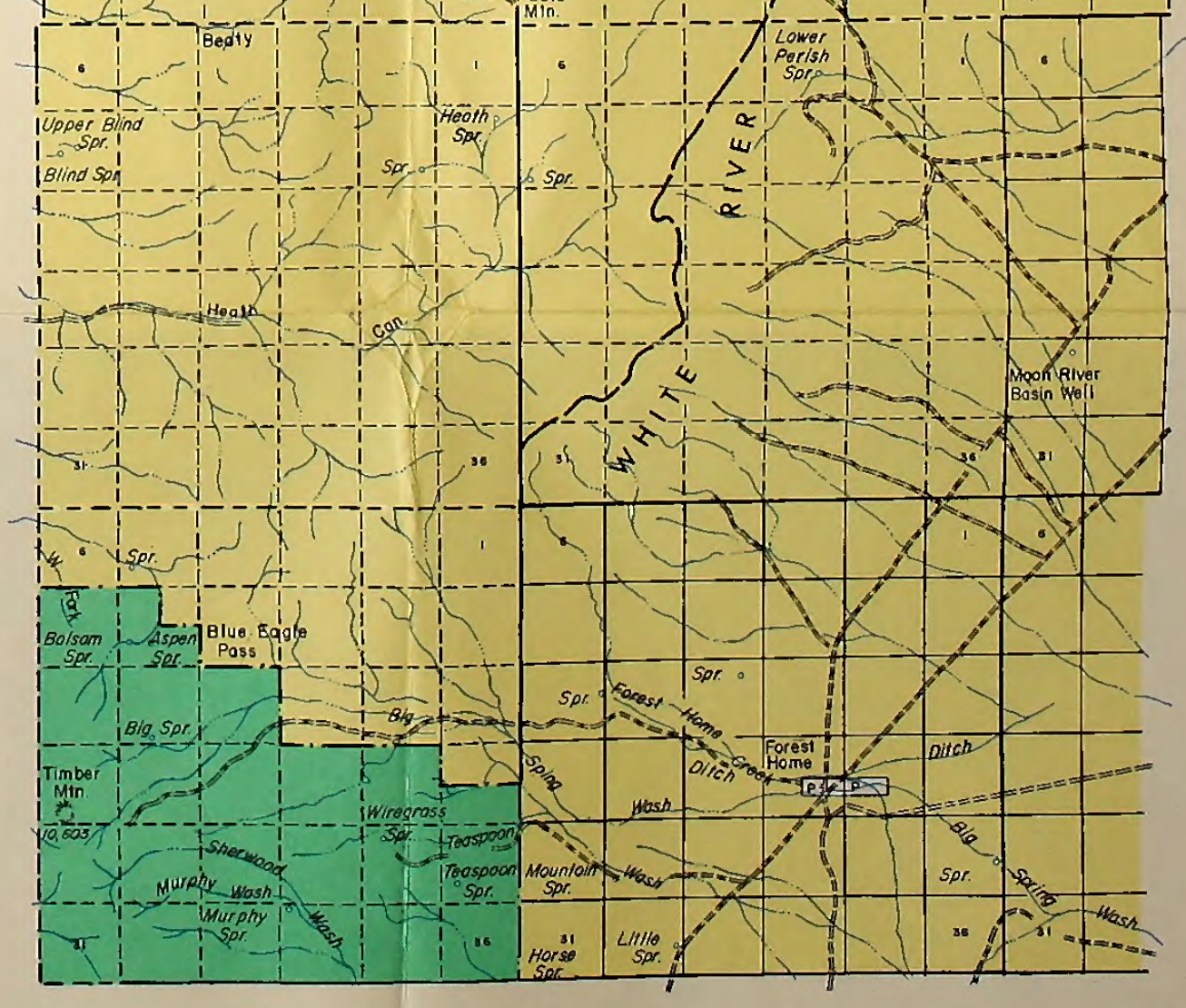
LEGEND

- Public Domain (BLM)
- Patented (Private) Land
- National Forest
- Indian Reservation
- Federal Agency Withdrawal
- Highways
- All Weather Roads
- Seasonal Roads
- Primitive Roads



Scale: 1/2" = 1 Mile

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



R.58E. R.59E. R.60E.

PRESENT SITUATION MINERAL INVENTORY

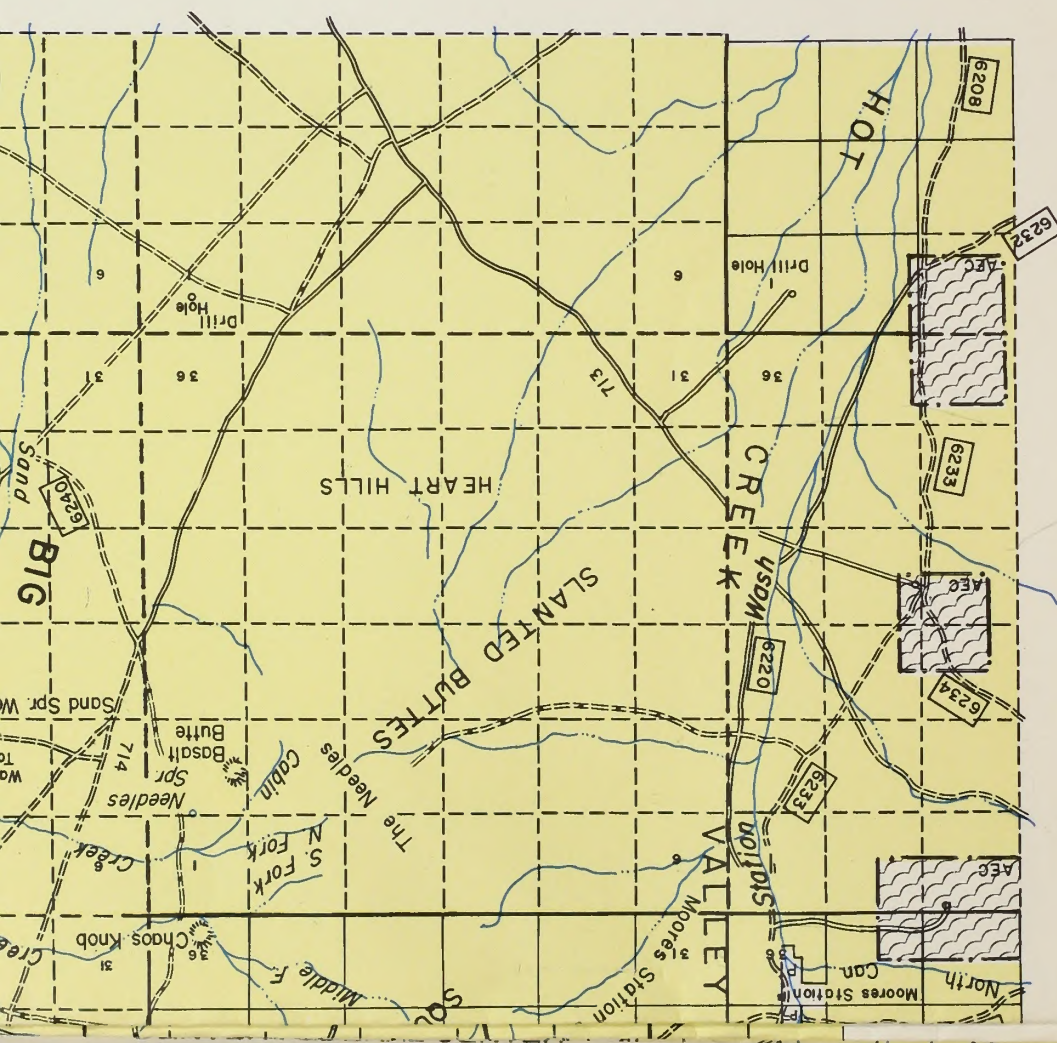
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Mineral resource analysis of
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